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THE YOUNG MAN.

The best rules to guide a young man are to talk little, to hear much, to reflect upon what has passed in company, to distrust one's own opinions, and value others' that deserve it.—Sir William Temple.

Serving and Pleasing the Public.

The wretched telephone service of Continental Europe is well known, and an explanation for it, perhaps, may be read between the lines of a recent cable dispatch from Vienna. It seems that telephone subscribers in the Austrian capital were in the habit of asking the telephone operators to wake them up in the morning by ringing their telephone bells. Travelers would also request "Central" to notify them by the same means so they could rise in time to catch early morning trains. "Finally," says the cable report, "the government (which owns and operates the telephone system), disapproved of the practice and issued an order that it must cease, explaining that the telephone operators were engaged to perform serious work and not duties of a menial character. Henceforth early rising tourists must depend upon alarm clocks."

Such an order would indicate that the government did not think it necessary to go to much trouble to accommodate the public, and if this policy is enforced and influences the entire telephone staff one need seek no further for the cause of the poor service to be encountered in France, Italy, Austria and other European countries. It is a resemblance of the "public be d——d" policy that has caused no end of grief to certain corporations in our own country. A change of front in this respect is noticeable in America in recent years, for the wise heads in places of responsibility and power have seen the importance of establishing friendly relations with the public.

It may add to the labor of an operator to answer subscribers' questions like "What time is it?" but the shrewd telephone manager will not object, knowing, as he does, that the more courtesies his company grants the subscriber the higher will it stand in the general estimation of the public. The Chicago (Bell) Telephone Co. urged the installation of the "nickel-first" equipment, among other reasons, because subscribers could not then pester "Central" to tell them the time of day. It is this same spirit that has won the company much adverse criticism for its attitude to the individual subscriber, and led to the city authorities establishing a bureau where citizens can file complaints concerning telephone service.

Public utility companies exist to give the people service, and the company which gives that service cheerfully and does not evade the opportunity to extend its scope of usefulness—even if there be no immediate payment therefor—will profit in the long run.

Looking Ahead.

With the beginning of September the vacation season is at an end. This month thousands of students are returning to schools and colleges to pursue studies which will fit them to better face the problems of their future. These students are not the only persons who are preparing themselves to be better fitted for their future work. Persons whose "school days" have ended, or who were not able to obtain the education they now find necessary to enable them to reach a responsible position in their particular line of work, are laying plans for home study and self improvement during the coming winter months.

Some have or are planning to enroll in correspondence schools, while others have laid out a definite course of study in some particular subject and have purchased books relative to that subject. It is not only the man who works with his hands who is planning his winter's self-educational work, but it is also the man who works with his head and holds a higher position, the man who realizes that he must have a fuller knowledge of the principles which are essential to the successful conduct of business. All ambitious men, both in high and low positions, realize that in order to advance, a man must constantly study.

The Formula for Greatness

By HERBERT KAUFMAN

There is no success without faith. Hope is an untrustworthy lantern. Confidence is a conceited guide. Courage is a foolhardy captain. But faith is the divine power before which mountains crumble; barriers tumble; horizons melt; and fear and doubt and failure retreat.

It isn't the strength of your body, nor the shrewdness of your wit, and it isn't the skill of you, but the will of you that sustains resolution and brings you over the long road and lands you at the far haven.

The greater part of greatness is vision.

History is the dearest of a chosen few who could see beyond the seas; above the clouds; below the ground—who could hear destiny call to them from the unknown vasts.

But, bless us! This is getting too rhetorical for matter-of-fact folks such as we. Let's get down to hard pan and talk in short arm jabs. All the foregoing is just a way of saying that "a quitter must lose out."

Big games can't be won in a hurry—there are far too many players.

A man's hardest fight is always in the beginning. The world is filled with mediocre folks and we can't tell you apart until you've struggled your way out of the mob that pushes, and jostles, and clamors for second handed opportunities.

Little people are envious and incredulous and mean—what they can't see, they deny.

The majority of us are dogs in a universal manger.

Any unusual efficiency on your part will arouse rivalry and discouragement.

Styles are constantly changing in cravats, and coats, and whiskers, but human nature has altered very little since Grandfather Adam designed the pattern.

We've always made it hard for the man who wanted to make it easy for us.

Beef and brains have achieved mighty little for humanity—it takes backbone to succeed.

All human battles are won and lost within the soul.

A library full of information isn't worth the paper on which it is printed, to men who cannot show what they know.

Ambition is a squandered emotion to a weakling who surrenders before he reaches the goal of his hopes.

Few men have unique ideas. Capacity for hard work, grit, self-denial, and doggedness, are the steps on which the few climb above the multitude. Quote as many contrary cases as you please, and the world's record will prove that you've chosen exceptional examples.

Point to as many "Lucky" individuals as you can recall, and investigation will furnish tenfold of instances in which "Pluck" dominated.

The formula for greatness is simple—as simple as greatness itself—unswerving faith in chosen ideas and ideals.

Where there's room for doubt, there's no room for success.

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Tale of the Telegraph and Trials of the Telephone Retold

A Condensed Chronological Narrative Dealing with the History of the Telegraph and with the Men Who Contributed to Its Success, Early Vicissitudes of the Telephone—Reproduced Through Courtesy of The Southwestern Telephone News

By George W. Foster

[EDITOR'S NOTE: The author of the following article explains that having, in searching for other data, discovered what was to him something rather new in the matter of the history of the invention of the telegraph, and as regards certain analogies in the later invention and introduction of the telephone, and believing also that a chronological story embracing both important subjects in a greatly condensed narrative, might arrest the attention and arouse the interest of the rising generation of telegraph and telephone men, it was thought it might be well to retell the interesting story. Believing that history has not done justice to some of the indespensable factors in the invention of the electric telegraph and that this is not generally known among the younger generation of men engaged in that and its allied enterprises, it was believed that a review of the subject might be made interesting and possibly instructive to many readers. The author makes acknowledgment to The Century Company for permission to use the copyrighted article in its April, 1888, issue, by Franklin Leonard Pope; to Charles Scribner's Sons for permission to quote from a copyrighted article in its May, 1892, number, by John W. Kirk, and to A. C. McClurg & Co., publishers, Chicago, for permission to make quotations from "The History of the Telephone," by Herbert N. Casson.]

Shop in Which Vail and Baxter Constructed Telegraph Apparatus.

The nineteenth century can, with the best of reason, be known as the age of electricity. Samuel Finley Breese Morse is credited with the invention that began the electrical age; his name has come down in history as the father of the telegraph; one to be revered and remembered. He was born in Charlestown, Mass., in 1791; one of the closing years of the eighteenth century, and graduated from Yale in 1811; one of the opening years of the nineteenth century.

His extraordinary talent in drawing and painting attracted the notice of Washington Allston, a noted American painter of the time, who induced Morse's father, an eminent New England divine and geographer, to send him to London, which was done in July, 1811.

Morse was named for Samuel Finley, the second president of the College of New Jersey, at Princeton. Breese was his mother's maiden name.

Washington Allston introduced Morse to the president of the Royal Academy, London, who, after a trial of Morse's skill, permitted him to enter the academy. His career as an artist in London was most flattering. He won a prize in sculpture, and made personal friends with many of the leading artists and writers in England, among whom were Turner, the great marine painter, and Coleridge and Wordsworth, the poets. It was freely predicted he would win a prize offered by the Royal Academy, for which he was making preparation, when a message from his father made it necessary for him to hurry home and the opportunity was lost.

To seem to have success within his reach, time after time, and to miss it always by no apparent fault of his own, was Morse's misfortune throughout his entire artistic life, from the time he left Yale at the age of 20 until he reached his fortieth year.

Upon his return to Boston from his first stay in London, Morse was received with high honors and great social favor, but he did not find any market for historical paintings. He did better in portraiture. Most of his success in this field was attained in Charleston, S. C., where he accumulated $3,000 and returned to New England to be married.

Again he turned his attention to historical subjects and spent 18 months transferring to canvas a session of the House of Representatives at Washington, but it found no American buyer and was finally sold in London.

In 1825 he lost his wife and father and mother and in 1829 returned to Europe to study in the great galleries of Paris, Florence and Rome, having a few orders for copies of noted paintings. He was received everywhere as an artist of note and achieved fresh laurels, among his fellow painters, but when, in 1832, he boarded the steamer-packet, "Sully," at Havre for New York, he was in a deplorably straitened financial condition.

It was on this voyage, when Morse was in his forty-first year, that, casting about for some surer means of bettering his fortune, he drew, in his sketch book, a picture of an electromagnetic device for recording signals at a distance. One of his fellow passengers, Dr. Jackson, of Boston, claimed, long afterward, that he suggested these very plans to Morse and became one of the patent contestants.

On landing in New York, Morse was compelled to exercise all of his energy in earning a bare living and for three years was on the verge of actual want. He gave a little time to his electromagnetic apparatus and managed to make a rough model of his invention, but having no money and little mechanical skill, the result was not very encouraging. It was not until the University of the City of New York, then but recently organized, established, in 1835, a professorship of the Literature of Arts and Designs, and tendered the chair to Samuel Finley Breese Morse, that he became a professor and found an opportunity to experiment more at leisure with his electrical device.

In January, 1837, Professor Morse took into his confidence Dr. Leonard D. Gale, of the chair of chemistry, in the University, and showed Gale his model. Dr. Gale entered into the plans of Morse with considerable enthusiasm. He saw where improvements could be made and knew, what Morse did not, that Professor Joseph Henry, then of Princeton, had been experimenting in the same direction and had independently discovered, six years before, while at Albany, two important facts in connection with electromagnetic signaling, which will appear hereafter. It is conceded that Morse did not know of this and when Dr. Gale suggested them to Morse as means of improving his device, they were immediately adopted as if they were his own discoveries.

That Professor Morse had the utmost confidence in himself and a full belief in his own superior intellect and judgment is patent to anyone reading of his struggles. His almost unprecedented triumphs as a painter and sculptor, when competing with the greatest artists of his time, in the greatest capitol of the world, at an age when his character was in the plastic stage and being formed, explains much of the reason for his somewhat peculiar actions later in life. It looks now as if once he adopted an idea of another in his mind it became his own, and no argument could induce him to believe otherwise. He undoubtedly believed,

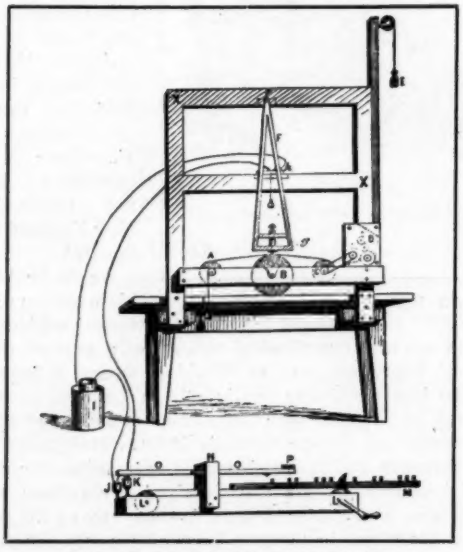
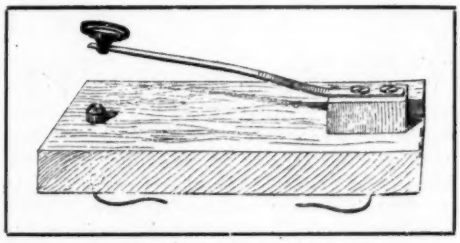


Diagram of Morse's Instrument, 1837.

honestly, and actually that he could not be induced to accept an idea that wasn't his own.

When he was finally told by Dr. Gale that to increase the strength of an electromagnet, its arms, or poles, must be wound with several layers of insulated wire, and to increase the strength of his single cell of galvanic battery, he must add several cells and couple them up in series, he proceeded to adopt the plan as his own; and its marvelous success made him positive it could have been thought of by no one else; whereas, he was using a discovery made by Professor Henry after long and patient experiments, known to Gale. But Morse did not, at that time, know it and he never would acknowledge his indebtedness to Henry at any time afterward. It will be seen that Professor Morse's



Alfred Vail's Telegraph Key, 1844.

habit of mind was very peculiar, but that it was a habit of mind, growing out of his unusual triumphs in youth, instead of any dishonesty of intention, seems certain.

With Professor Henry's idea applied to his own crude apparatus, Morse gave an exhibition of it for the benefit of Professor Daubeny, of Oxford, England, Saturday, September 2, 1837, at the University of New York City. By one of those singular coincidences in history, the unforeseen result of which is to divert the stream of events into an entirely new channel, and change utterly the subsequent actions of persons engaged in an important enterprise, there appeared at this experimental exhibition an uninvited guest —Alfred Vail.

At that period Alfred Vail was 30 years old. Son of Judge Stephen Vail, an ironmaster, of Morristown, New Jersey, he entered his father's Speedwell works at the age of 17, upon his graduation from school, and remained there, employed as a mechanic until he reached his majority, in 1828, acquiring unusual skill as a mechanic and draughtsman. Upon becoming of age, Alfred decided to quit the iron works and satisfy his ambition to get on in the world, in a wider field. His father and brother, George, tried to dissuade him, but in 1832, at the age of 25, he entered the University of the City of New York to study for the Presbyterian ministry and was graduated in 1836. Toward the close of his term his health became impared to such an extent as to preclude the possibility of his leading the studious, sedentary life of a minister and the problem of his life's work was still to be solved.

The accident of his chance call upon Professor Morse upon the occasion above referred to, however, completely solved that problem.

An article in the Century Magazine for April, 1888, by Franklin Leonard Pope, chief electrician for the Western Union Telegraph Co., quotes from papers left by Alfred Vail, referring to his occasional visits to New York during the year following his graduation from the University, in which Vail says:

"On one of these visits, prior to September 4, 1837, I accidentally, and without invitation, called upon Professor Morse at the University, and found him with Professors Torry and Daubeny in the mineralogical cabinet and lecture room of Professor Gale, where Professor Morse was exhibiting to these gentlemen an apparatus which he called his 'Electromagnetic Telegraph.'"

Mr. Vail describes the well known imperfect, and cumbersome device of Morse, but tells what a deep impression the idea of telegraphy made upon his mind. Here was "the germ of what was destined to produce great changes in the conditions and relations of mankind."

This model, made by Morse, the only one he ever made was mounted on a frame such as artists use for holding their canvas. The machine for sending the signals on the circuit was worked by a crank and was arranged to hold metal fingers, or type, fitted into a sort of printer's "stick" or rule, which slid along under a circuit closing device sending a dot to line as each metal finger raised the circuit-closing arm. The receiving device was an electromagnet arranged to pull an armature, to which was attached a lead pencil, and make an irregular line on a slip of paper moved under the pencil by clockwork. Morse's plan was to let these lines represent numbers and let the numbers, when arranged in a certain way, stand for words and to carry out this plan he spent his spare time for some years arranging a dictionary to be used as a key to his telegraph system. As this would have required a reference to the key in the first place to set the type on the transmitting "stick" or port-rule, and a reference to duplicate key, or dictionary, to translate the message at the receiving end, all of this would have required a long time to handle a short message.

Alfred Vail's mechanical skill permitted him to discover at a glance various ways of improving the machine and he lost no time in arranging a partnership with Morse for a fourth interest in the device under an agreement which stipulated that Vail should reconstruct the machine at his own expense, pay for a patent and all expense of exhibiting an improved apparatus to the public, and before the Congress at Washingion. Alfred Vail presented the plan to his father, Judge Stephen Vail, owner of the Speedwell iron works, in a manner so enthusiastic that Judge Vail promised to furnish two thousand dollars and allow a room at the works to be set aside for the manufacture of an improved telegraphic machine.

At that time $2,000 looked bigger to the average manufacturer than 200 times as much would appear now, but Stephen Vail had forged at his Speedwell works the shaft of the first steamship, the "Savannah," to cross the Atlantic and made the tires, axles and cranks for the first American locomotives, and he was progressive and enterprising in an unusual degree.

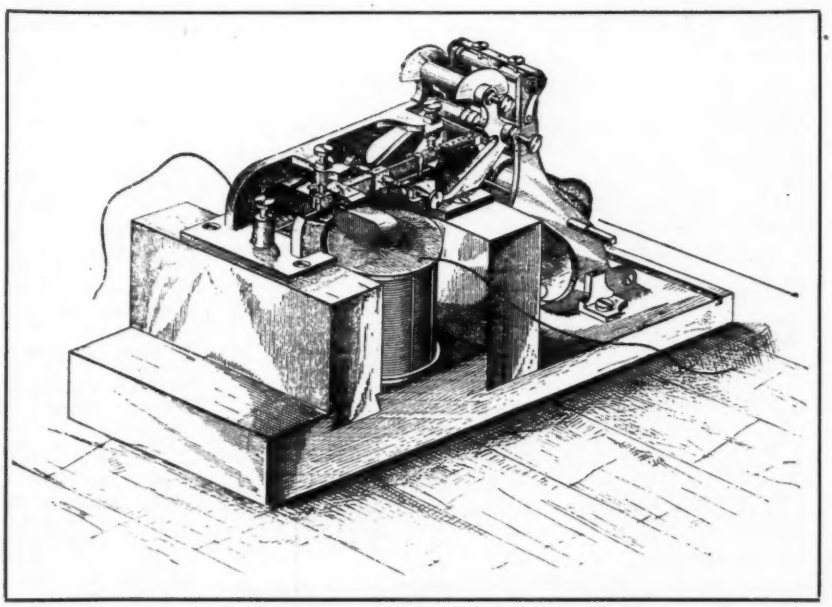
A boy of 15, Wm. Baxter, afterward inventer of the Baxter engines, an apprentice at Speedwell, was assigned to Alfred Vail to assist him in his work of rebuilding the Morse machine. Baxter lived until 1885 and it was from his testimony and from letters and memorandums of Alfred Vail, found after the death of the latter, that Vail's important part in the perfection of the telegraph invention was discovered.

The room in which Vail and Baxter worked was kept locked, and no others than Judge Vail, George, and Professor Morse, and a very select few, were permitted to enter it. It was preserved for many years by Judge Vail's descendants "as a memorial to the infancy of one of the grand achievements which mark the progress of civilization.

Vail and Baxter worked day and night to prepare the apparatus for exhibition at Washington before members of the coming Congress, but their difficulties were great. Insulated wire was unknown and they had to resort to the use of the cotton-wound copper wire used in the sky-scraper bonnets of that day and the milliner's supplies were soon exhausted. Everything electrical, including the form of the batteries and the size of the elements; the magnets and all their attachments had to be planned, drafted and manufactured without previous samples for guides. To obtain the right kind of material was a serious problem and the cause of much delay.

As the time dragged on, the New Jersey farmers began to make sport of Stephen Vail and he ceased to visit the locked room. Alfred feared his father would stop the work, and carefully avoided meeting him. Times were getting harder and money was scarce, but Alfred and Baxter toiled on as though the next day would be the last one allowed them to complete their improved machines. During this period Alfred Vail gave much thought to the problem of simplifying the Morse method of signaling by numerals. He finally hit upon the plan of forming the alphabet of dots, dashes and spaces. He first studied newspapers and counted the letters of the alphabet in a given space and finding the letter "E" the most used, represented it by one dot. It soon occurred to him that the typesetter's "case" would have the problem of the letters already solved, and he resorted to the printing office to get his data. From this he invented the "Morse" alphabet. This alphabet has come down to our time without a single change made in the United States. It has been adopted by the army and navy for signaling with flags, sirens, and smoke or steam. It is wonderfully simple and effective and it was the invention of Alfred Vail and not of Professor Morse.

At last, on January 6, 1838, young Baxter ran from the shop coatless, though the weather was cold, and notified Judge Vail that the telegraph machine was completed and Alfred wanted him to see it work at once. Judge Vail hastened to the works, where a trial line had been set up, and at Alfred's request wrote a message, as follows, which was sent by Alfred and received by Baxter, who wrote it down and handed it to Judge Vail: "A patient waiter is no loser," which was the first message ever written and recorded by telegraph using the "Morse" alphabet.



Vail's Telegraph Register, Baltimore, 1844.

This successful trial fully restored Judge Vail's confidence in the telegraph plans and renewed his interest to

(*Continued on page 47.*)

Help Not Hinder

That Chicago Currency Conference—When Doctors Disagree

By J. C. Kelsey

You and I clearly saw a man shot. At the trial you testified that the defendant ran north—and you told the truth. I testified that I saw him run south—and I told the truth.

It is a fact that no two persons look exactly alike. Nature does a special job on each human face and body, and she gives to each one a special set of brain cells so that no two men can fully agree.

At the Chicago conference of bankers, called for the discussion of the proposed currency bill, the defendant was seen running in several directions.

The first testimony at the conference was from Charles G. Dawes, president of the Central Trust Co., of Illinois, a Chicago bank. He said the proposed currency law would result in such an *expansion of credit* that it would *invite disaster.*

After this rather gloomy speech and even before the assembled bankers had quit wiping their tears away, the next witness, another Chicago banker, James B. Forgan, arose. He said:

"The effect of the currency bill would be the most damnable *contraction of credit* ever proposed in this country, such that it would be *impossible for business to go on.*"

Can you beat it? Both men are equally astute, and their money power is relatively equal. Yet one sees expansion, and the other sees contraction.

It reminds me of a Canadian suit for compulsory physical connection.

The Bell forces claimed it would ruin them to give long distance service to a competitor, and I claimed it would not.

The commissioners simply did not know which side to believe. I finally suggested that the scheme be tried out. Sure enough a two years' trial has not seen any ruin yet.

So the real currency bill treatment is to try it out—to see if it contracts, or expands, or neither.

The chances are 100 to 1 that it will do neither, and will prove to be just what is claimed for it.

If two gigantic bankers see things so divergently, the best thing we can do is to sit tight and see who is wrong. They may both be wrong.

There was a lot of human nature in this meeting.

It soon developed that about 125 of the assembled bankers were for the administration. Guess what these bankers were? Simply Democrats.

And the other 125 bankers were against the administration, simply "agin the government." Guess what these bankers were? Simply Republicans.

The Republicans were bound to kill the whole deal, and the Democrats naturally were trying to protect it.

And of course, there were independents who urged that there be moderation. In other words—help, not hinder.

How easy it is to destroy! And it is gratifying to me that the assembled bankers were human too. It is human to destroy.

To build up is merely the thin shell of civilization. Remove this thin veneer and your 20th century citizen is just as much of a destroyer as your Goth and Vandal ancestors were back in the centuries.

Just for completeness, I want to record here the destroying document of Mr. Forgan's. It was presented to the meeting as a resolution.

Whereas, The general effect of the measure on the existing credit relations between the banks and the public, as they have been forecast, would be ruinous both to the national banks and to general business.

Whereas, Unless practically all the national banks agree to participate in the provisions of the measure and subscribe for the capital stock of the federal reserve banks, it will be impossible to organize the federal reserve banks and the measure will prove a failure.

Whereas, In our opinion the national banks will not agree to it without a contest as to their constitutional rights, and even if such contest should be decided against them, are most likely to withdraw from the system.

Be it Resolved, That in view of these recapitulated considerations, which we believe to be facts, we would respectfully recommend to Congress that the attempt to pass the measure at the present special session be abandoned;

And Whereas, In view of the great importance of the subject, which is purely a business problem as far removed from politics as any problem affecting the interests of the public can be, the welfare of every citizen being affected by it and the multitude of bank depositors in the country being specially interested in it;

Therefore, be it further resolved, That we respectfully recommend to Congress that a commission should be organized, composed of three men representing the government, to be appointed by Congress, three men representing the commercial, industrial and agricultural interests of the country, to be appointed by the National Chamber of Commerce, and three experienced bankers, to be appointed by the American Bankers' Association, to carefully consider the subject and prepare a bill to be submitted to the next regular session of Congress.

Contrasted to this, is the opinion of Banker Reynolds, the man who came out of the West mild, conciliatory, willing to compromise, anxious to upbuild, and showing real effectiveness.

I am confident that all the men here are actuated by the highest motives to serve the country, and through serving the country, to serve the highest interests of the banking business. Unless we are careful, we may work at cross purposes.

We are talking about a measure that is still incomplete. What we do should be in the nature of conciliatory and constructive discussion. We should waive everything penurious and small. We will find then that the government will meet us more than half way. I believe that Washington will welcome us if we come friendly.

The officials at Washington seem sincere in their efforts to give us as good a bill as political exigencies will permit. It is not by hitting at every feature of this bill that we can get at the sort of bill best suited to the needs of the country. We must strive by a conciliatory and constructive effort to get a law that is reasonably fair and just. If it is possible to secure legislation I would like to be shown the way.

Already a number of concessions have been made to us as bankers and more will undoubtedly be made before the bill is in its completed form.

So the meeting became a sort of a scrap between the vigorous and unrelenting Republican, Mr. Forgan, and the equally vigorous but more constructive Mr. Reynolds, himself inclined to be friendly to Mr. Wilson's administration —and they got sensitive.

I tell you, I am glad to know that these dignified gentlemen are human.

Banker Reynolds said that "We must strive by constructive effort and conciliation to get laws."

"I exhort you to adhere to a line of criticism that will be helpful and constructive."

The chip on Mr. Forgan's shoulder was getting shaky.

He shot back, "No man in this room is more desirous of seeing constructive legislation than I."

"This bill was drawn by ignorant men."

And so it went back and forth.

Now we have heard that harmony is the strength and support of all institutions, particularly banks. We have also learned that dissension is a factor in progress.

And it came to pass that out of the bankers' dissension came harmony, and they actually drew up amendments to the bill.

It was finally admitted that the bankers have not been ignored at all. They have been consulted at every turn by the authors of the bill.

The whole trouble seems to be fostered by the National City Bank of New York. This bank seems to have so little business of its own that it tries to run everybody else's.

It is the same bank which sends out telegrams asking you to buy Bell-made switchboards.

It has not dictated religion—that is about all.

Bankers have been freely considered. All the gossip about ignoring them came from this New York busybody bank.

The St. Louis banker finally said:—"If we can't do anything besides condemning the Wilson administration, we had better adjourn. We should strive to get a bill which will benefit us as citizens and not bankers."

So you see, out of this coldly intellectual mess was rising phoenix-like, the spirit of constructiveness. Finally at the banquet, the plea for calmness came.

Say, can you believe that a group of bankers could get excited?

Finally it was thrust upon the bankers that there were several interests to be considered besides banks. Strange, no one thought of this before.

Not only the bankers must be satisfied, but the administration in power, and the interests engaged in commerce—in other words, the public.

And so they went home.

The committee of seven was appointed to proceed to Washington on an errand of conciliation; to ask for amendments, agreeable both to the democrats and the bankers.

Think of it! Each succeeding administration for 20 years has dodged the currency issue. Each succeeding year the American Bankers' Association has been unable to outline what they really want.

After all, they all seem like children in not knowing what they want.

The secret of it all is the desire of the bankers to control the federal reserve board.

They naturally want to handle the government's money.

Their prevailing argument is that bankers know the banking business.

It is easy to admit this, but the handling of emergency money is just as much of interest to lawyers, preachers, doctors and business men. It is really more.

A bank is like the moon—it really reflects other interests, not its own.

The currency bill, then, is the business of practically every man, woman and child.

It is queer that a group of men, knowing the necessity of removing the handicap to our real prosperity, should object to the first real move made in their behalf.

But it reveals that the laws of human nature are not changed by caged windows. Somehow I rather like to see that destructive streak showing itself.

So much has been said in our business about constructing and not destroying, that I got to thinking we were the only ones guilty of destruction in trying to chop off the tentacles of a so-called natural monopoly.

It seems to me that the Koran, the religion of the sword, seems to be guiding bankers—but not all of them, of course.

The real trouble seems to lie in a sort of a feud between the secretary of the treasury and the National City Bank.

The National City Bank is called a Rockefeller bank. I feel that Independent telephone people should know something about this concern, which cannot conceal its hatred of our Independent telephone matter.

It is accused of loaning the Chicago Railways a small item of $44,500,000.

The law of New York says:

"Not more than 10 per cent. of the capital plus the undivided profits of any bank may be loaned to any one concern."

Anyway, the officials deny loaning that much money from the bank.

But getting back to the bank and its history, Frank Vanderlip, its president, came to Chicago and became the financial editor of a paper. See what a future I have.

Lyman J. Gage became secretary of the treasury and appointed this young man as assistant secretary. Finally Vanderlip went to the National City Bank as a vice-president, but his friends stayed behind to keep him posted on the government's financial doings, bonds particularly. While Vanderlip was secretary he recommended that the old sub-treasury site be sold to the National City Bank at a price so ridiculously low that it became a scandal. Later he got a job with the National City Bank.

You can use your own mind to decide whether banks have gratitude or not.

Anyway, we are interested in this bank—and it affords the young man a nice program for "how to succeed."

Be a financial editor. Then get a government job, and then you are welcome. Soft, isn't it?

Getting back to the serious side of the currency bill, it is solely designed to help 25,000 banks protect their legal reserves in times of financial stringencies.

As it stands today, banks are exponents of competition, the like and stress of which has never been seen in telephone warfare. They have real competition in banking circles when money gets scare.

As usual, with all other human institutions, banks will have to be forced to do something for their own good.

MORAL: Human nature is always the same.

Increase in Wisconsin Service.

The telephone service in Milwaukee has increased 14 per cent. during the past year according to a statement made by B. E. Sunny and Alonzo Burt, officials of the Bell company, who visited the city on a tour of inspection. "We have about 250,000 telephones in the state," said Mr. Sunny. "This means a growth of about 30,000 in the past year."

A Quartet of Men Prominent in the Telephone Field

ED. A. HOOK, of Appleton City, Mo., who has been appointed secretary-treasurer of the new Missouri Telephone Association, was born in 1865 on a farm within eight miles of Appleton City. He attended the country schools of the district, and remained on the farm until he was 35 years of age, when he accepted and held for four years the office of circuit clerk of St. Clair county. In October, 1903, he bought a small telephone exchange at Appleton City, Mo., having 104 subscribers, and in eight years' time increased the number of subscribers to 467. He then traded the exchange for a farm. For seven years Mr. Hook was representative for the Kinloch Long Distance Telephone Co. of Missouri, for the district from Jefferson City to Joplin, Mo. He resigned this place on July 1, 1913, to take up the work of organizing the new Missouri Telephone Association, to which he expects to devote his entire time. He will retain his residence in Appleton City and will maintain an office at Jefferson City, Mo. Mr. Hook is a Scottish Rite Mason, Knight Templar, Shriner, Odd Fellow and an Elk.

FRANK LORAINE MIDDLETON, now connected with the North Electric Co., Cleveland, Ohio, was born at Kirksville, Mo., in February, 1867, and was educated in the public and commercial schools of Elkhart, Ind. He entered the telephone field in 1881 as night operator at Elkhart, Ind., and was identified with the Bell interests in various capacities until the opening of the Independent field, when he organized the Home Telephone Co., of Elkhart. He was prominent in the development of the Independent field in Indiana, and also at Waco, Texas, in the late nineties. Later he was identified with the Chicago Telephone Co. for a short time, after which he took a position with the Stromberg-Carlson Telephone Mfg. Co., at Chicago. He was sales manager of that company for three years and was then for two or more years sales manager of the International Telephone Mfg. Co., after which he was connected with the sales department of the Automatic Electric Co., Chicago, until 1906. He is a member of the Elks, K. of P. and of the Telephone Pioneers of America.

DR. ROBERT EARL GORDON, president and general manager of the El Paso Telephone Co., El Paso, Ill. was born at Carlyle, Ill., in September, 1872, and received his education at the Carlyle High School, McKendree University, Lebanon, Ill., and with the Missouri Medical Co. Dr. Gordon has practiced medicine for 20 years. In 1899 and 1900 as a mater of convenience to his patrons, and as a business proposition, he installed the first telephone system in the county, consisting of six country lines with 100 subscribers on a home-made switchboard which he constructed himself, of call bells, binding posts and knife switches, and which he installed in his residence. In 1901 he organized the El Paso Telephone Co. and became its first president. He has also acted as general manager of the company for the past five years. Dr. Gordon organized the surrounding country into one large component Independent telephone system, assembling the farmers in school houses at night to get them interested. He is a member of the state and national telephone associations. He is a Knight Templar.

M. E. GANTS, plant chief of the Jasper County Telephone Co., Newton, Iowa, was born at Wenona, Ill., in June, 1878, and received a common and high school education. He began telephone work by organizing farmer lines, beginning with July, 1897. In the year 1898 he built the exchange at Wenona, Ill., and together with F. Z. Ames, organized the Central Illinois Independent Telephone Co., Rutland, Ill., in 1901. In the same year he disposed of the Wenona exchange. He was then employed in the switchboard department of the factory of the Stromberg-Carlson Telephone Mfg. Co. after which he accepted a position with the Central Union Telephone Co., at Kankakee, Ill. He left this position to become wire chief for the Eastern Illinois Independent Telephone Co., at Kankakee, Ill., after which he became wire chief for the Interstate Independent Telegraph & Telephone Co., at Springfield, Ill. He left this position and entered the installation department of the Western Electric Co., after which he became plant chief for the Jasper County Telephone Co., Newton, Iowa. He is a Mason.

Michigan Commissioner Probes Detroit Telephone Service

Chairman Lawton Hemans of the Michigan Railroad Commission Spends Two Days Taking Testimony of Michigan State Telephone Co. Officials and Visiting Exchanges Preliminary to Considering Complaints and Data Secured by Commission's Investigator's—Further Hearings to Be Held

Lawton T. Hemans, chairman of the Michigan Railroad Commission, began an investigation at Detroit last week of the telephone service in that city. The chairman was assisted by C. B. Hall of Ann Arbor, a telephone expert who is working for the commission. General Manager Arthur von Schlegell of the Michigan State (Bell) Telephone Co. was examined for two hours in regard to the service which the company is giving, and the other officials called were William A. Spencer, traffic manager; Carlyle Kittredge, engineer; William C. Kirk, superintendent of maintenance, and G. M. Welch, commercial superintendent.

TESTIMONY OF GENERAL MANAGER VON SCHLEGELL.

"There are 80,517 telephones in the city," said General Manager von Schlegell. "Nineteen per cent. of this number are connected with private branch exchanges. The increase since 1903 has been 542 per cent. In that time the population of the city has increased from 360,000 to 541,000. The operators are not inattentive. There is a supervisor to every nine operators, an assistant chief operator to a certain number of supervisors and a chief operator over all. A total of 12,000 calls a month are supervised. The number of telephones per operator has decreased from 60 per cent. to 40 per cent. during the past year. The average number of calls per day in Detroit is 765,000, which figures out 9.5 calls per telephone per day. On 95 per cent. of the telephones of the city there are no restrictions whatever regarding carrying on unlimited conversation. The balance are pay stations."

He then declared that the average time to connect each subscriber is four seconds and to disconnect 3.5 seconds; that errors are made on 2.3 per cent of the calls made. During the past year the number of calls answered in more than 10 seconds was reduced from 8.6 per cent of the total calls to 6.5 per cent.

He declared that the Detroit system has a higher calling rate than any other large system in the United States. When asked for the number of sub-stations connected with the various exchanges he said there are 3,749 telephones on the Cadillac exchange, 3,525 on Cedar, 5,837 on East, 8,107 on Grand, 4,414 on Hemlock, 4,354 on Hickory, 10,929 on Main, 7,309 on Cherry, 10,486 on North, 9,667 on Ridge, 6,436 on Walnut and 5,743 on West. Every exchange is connected with every other exchange by direct trunk lines. He declared that in case of congestion calls are relayed through other exchanges. When asked if this caused delay he replied that it caused a little delay, but not enough to annoy the subscriber. The number of substations has increased from 37,232 in 1909. An addition of 5,500 sub-stations was added to the system when the Home company was cut in last March.

Mr. von Schlegell said the percentage of party lines had increased from 39 per cent. of the total number of telephones in 1909 to 52 per cent. at present. At the time the Home company's telephones were cut in, 64 per cent. of its telephones were party lines. The rates for the party lines are $2 for four-party lines, $3 for two-party lines and $3.50 for one-party lines. He thought that the present system amounted to a discrimination against the small user, because at present a person who uses a telephone 10 or 20 or more times a day pays the same for it as a person who only uses it once or twice.

The matter of wages was then taken up. While attending the training school, which lasts several months, the girls get $25 a month. They then work several months at $28, then three months at $30, seven months at $33, eight months at $35, 16 months at $38, 12 months at $40, and then at $42.50, which is the maximum for local operators. If they can get to the position of supervisors or assistant chief operators they are paid much more. He said the average length of service was 20 months, and that if a girl works one year she gets a bonus of $25.

When asked if he recognized any defect in the system, Manager von Schlegell said:

"I do not recognize any defect in the system under present conditions, as there is no lack of facilities. If a delay comes, it is because of work coming suddenly. Our plant is efficient in every respect. We have only one complaint, and that is the large per cent. of party lines and the large amount of traffic. Other cities have a smaller percentage of party lines and smaller percentage of calls.

"New York has 5,000,000 people and 483,000 telephones. Of this number but 7.6 per cent. are on a flat rate, the balance being on a meter service, including the party lines, which amount to 58 per cent. of the total number of telephones. The average call per telephone per day in New York is 4.6, which is one-half of what it is in Detroit.

"Chicago has 180,000 telephones, of which 58 per cent. are party lines. Forty-two per cent. of the telephones in Chicago are on a flat rate. The average of calls per day in Chicago is 5.9.

"Cincinnati, with 582,000 people, has 57,800 telephones, of which 54 per cent. are party lines. All Cincinnati's party lines are nickel pay stations.

"Cleveland has 620,000 people and 51,188 telephones, of which 48 per cent are party lines, with an average of 7.2 calls per day. Eighty-four per cent. of the lines are on a flat rate. The balance is nickel service."

EXPERIENCES WITH METER SERVICE.

Mr. von Schlegell related the experience of the company in Ann Arbor and Ypsilanti when meter service was installed.

"For a long time," he said, "there was unlimited service between Ann Arbor and Ypsilanti. As soon as we put in a meter service the number of calls dropped off to 8 per cent. of what they had formerly been. We had the same experience in Windsor. We used to have unlimited service between Detroit and Windsor. Since making it a nickel to telephone to Windsor the number of calls has dropped to 20 per cent. of what it was before. These calls could not have been very important or they would be worth 5 cents. I think that is the trouble in Detroit at present. I do not think any charges made here that would still allow unlimited calling and the large percentage of party lines, as at present, would be of much benefit. I am convinced that if the people wish to maintain calls in the future as they have in the past we ought to have one-party lines, but that would restrict the use of the service."

On the second day of the hearing General Manager von Schlegell said that while there had been many complaints regarding the service, there were no complaints regarding rates. The complaints against the service, he said, were due to the large number of party lines. Asked to explain the condition that led to the growth of party line business, he said:

"It was partly due to competition, but largely it was the outgrowth of a desire on the part of the telephone management to saturate the territory with telephones. The coming of competition caused us to change our selling method. Instead of trying to sell a man the service that we thought he needed we worked against competition that was giving free telephones by pushing our cheapest telephone, which is the four-party line."

In reply to a further query he stated, however, that the company had 7,000 party lines out of 28,000 telephones before the Home company began business.

Mr. von Schlegell then presented some figures regarding party line service taken by company testers. On a total of 408 three-party lines, calls ranged all the way from 2 to 220 in one week. On 79 two-party lines the calls ranged from 1 to 131 in a week.

Tests to find how often a line was "busy" were made on 43 telephones of all kinds. The "busy" signal was displayed from 4 times to 388 in three days that the test lasted.

"You'd think that when a firm's telephone is 'busy' 388 times in three days," said Mr. von Schlegell, "it needed extra service, but in that case our solicitor was told that the firm would think about the matter of increasing its service. Another firm that was 'busy' 327 times in the three days immediately put in three additional trunk lines to care for its business. Of the 43, there were 11 who ordered additional equipment to care for their calls, while 20 said they would think about it and 12 flatly refused to increase their telephone facilities."

The other officials of the company were questioned regarding the extent of the system, the organization of the operating forces, the methods of handling trouble complaints, etc.

William C. Kirk, head of the trouble department, said that during July, one of the busiest months of the year, there were 50,577 trouble reports received. Out of this number 37,645 were actual cases of trouble. Many reports are duplicates of the same trouble, he said, and reports are made on everything, from a wire hanging loose to failure to get the kind of service wanted. There were 5,831 reports on cases which did not affect service at all, he said.

Taking the month of June for the past six years, he gave the figures for the number of trouble reports and the number of actual cases found and attended to. There were in June, 1908, reports from 83 of every 1,000 telephones, of which 27 were actual trouble cases. In 1909 the figures were 63 and 27; 1910, 55 and 11; 1911, 62 and 22; 1912, 48 and 18; 1913, 57 and 25. In 1912, he said, June preceded the early summer storm season that is always productive of much trouble.

Commissioner Hemans stated that he had desired to thoroughly acquaint himself with conditions as presented by the officers of the company before taking up the complaints and reports of the inspectors who had been at work in the city for 10 days. The commissioner spent the afternoon making a personal inspection of the company's exchanges in the city. The commission's investigators, headed by C. B. Hall, also made an investigation of the internal workings of the various exchanges. Commissioner Hemans announced that further hearings will be held. He said he believed he would look into the situation in Grand Rapids and a few other cities and get some material for comparison with conditions in Detroit before completing the hearings.

The Paris Telephone System.

Reports from Paris state that a number of improvements have lately been introduced in both the urban and the interurban telephone services of Paris. The Paris telephone system comprises about 100,000 stations, which communicate with each other by means of 11 exchanges. The annual growth in the number of subscribers, which was 3,387 in 1910, reached 5,648 last year. To cope with the increase in the traffic two new exchanges are being provided on the right bank of the river, and one on the left bank, to relieve existing exchanges, and the three temporary exchanges which, after the fire of 1908, were installed in the Rue Gutemberg, have been transferred to the Hotel Telephones. For the interurban system 530 circuits converge in Paris, 20 being international, 263 interurban, and 247 suburban. The circuits are carried to the new exchanges in the Rue des Archives, the equipment of which is of the most modern character.

Charges New York Company Did Not Keep Promise.

M. H. Winkler, a lawyer, of No. 90 Wall Street, New York, has petitioned the Public Service Commission for a revision and reduction of telephone rates charged by the New York Telephone Co. in and between the boroughs of Manhattan and the Bronx.

He says that before April 29, 1913, the legislature passed the Duhamel-Larrimer bill, that fixed 5 cents as the charge for all telephone calls within the metropolitan district or the districts comprised in the five borough of the greater city. He adds that later John C. Milburn went to Gov. Sulzer and promised that if the governor withheld his signature from the measure the New York Telephone Co. would at once grant the reduction in rates.

Gov. Sulzer did not sign the bill, Winkler says, yet the telephone company has not made the reduction promised by Milburn.

Montana Commission to Investigate Forsyth Rates.

The Montana Public Service Commission has sent notice to the Mountain States Telephone & Telegraph Co. that it has determined to investigate, upon its initial motion, the rates charged for telephone service in Forsyth, Mont.

The allegation is made by the commission that the rates are discriminatory in that Forsyth is classified in the defendant's schedule in Class B which includes cities and towns having a population of from ten to fifty thousand. The commission points out, in its notification to the company, that the official census shows Forsyth to have a population of 1,395 and that therefore it should apparently be included in schedule Class D.

The telephone company is directed to file an answer within ten days either admitting or denying the allegations.

Object to Abandonment of Collector System.

Business men of Paris, Tenn., have signed a petition protesting to the Cumberland Telephone & Telegraph Co. against a new order of the company requiring subscribers to pay their telephone bills at the office of the company.

San Francisco to Seek Telephone Compromise.

The public utilities committee of the board of supervisors of San Francisco has under advisement a proposal of its chairman, Alex Vogelsang, that City Attorney Long be authorized to enter into negotiations with the Pacific Telephone & Telegraph Co. along lines heretofore proposed for reaching a compromise between the city and the corporation. Under the compromise plan the city would cease attacking the merger of the Pacific and Home companies on condition that both systems be operated hereafter under the terms of the Home franchise relating to the payment to the city of a percentage on the gross receipts. Such an arrangement would mean $60,000 a year for the city, whereas, under the terms of the Pacific franchise, no percentage is paid.

Reconstruction of a Historic Telephone Line in Arizona

History of a Telephone Line Built by the Government Between Apache Indian Reservation at San Carlos and Fort Grant—Line Abandoned When Troops Were Withdrawn From Fort—Its Rebuilding by Mining Company

By L. McCully Edholm

In the early days in Arizona, the government ran a telephone line connecting Fort Grant with San Carlos, the Apache Indian reservation. At that time the Apaches were in the habit of going on the war path at pretty frequent intervals, and until the line was constructed, much slaughter was done by this tribe before word could reach the fort and troops sent out to repress them.

After Geronimo, the chief, was captured and taken out of the country, the Apaches quieted down for all time. The troops soon after abandoned Fort Grant and the telephone line, which had done so much toward subduing this warlike people, became silent and was left to the mercy of the wind storms that blow so fiercely over the desert. In time the wires were broken, some of the poles leaned at an angle or lay prostrate on the ground, giving as desolate an appearance as the old fort itself, whose adobe walls keep crumbling away bit by bit each year, until now only a little remains standing to tell of its former habitation.

Scene in Mountains, Typical of Country Through Which the Line Was Run.

In this dilapidated condition the Copper Creek Mining Co., far up in the Galiuro Mountains, purchased the telephone line from the government. It then began the work of removing and rebuilding it into a private line to connect the camp with the nearest town and the outside world.

An old Apache, who perhaps had taken part in the Indian uprisings as a young man, was engaged with his burro train and his two sons, to go over the old line and collect the wire and poles which a gang of men had been detailed to coil and stack at convenient places. The poles and wires were loaded upon the burros, surely a little advance over the method used in the old days, for I am told that this burden was borne on the backs of the colored cavalrymen.

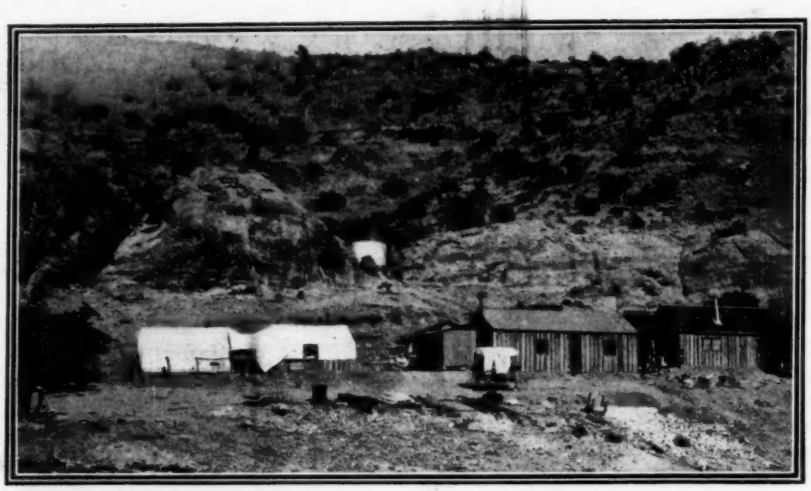
The work of running this line through the desert and into the mountains may seem very crude to the ordinary telephone lineman. No surveying instruments were used to determine the shortest route. The manager of the company took a couple of men with him and rode over the mountains to the little town of Mammoth, 18 miles distant, placing strips of paper on trees or tall cactus to mark the course which the line was to follow. By keeping a few of these in sight, a straight enough route was maintained.

Some of the Buildings of the Mining Camp in the Mountains.

Two gangs of Mexicans and cowboys were employed to hurry forward the construction of the line, one working away from the camp and the other working toward it from town.

The Indian with his train of a dozen burros dropped the materials very near to the places where they were to be used. Each burro carried two coils of wire and two poles, 20-foot lengths of 2-inch iron pipe, the ends of which dragged on the ground. One of them is shown in the first view of the group illustration.

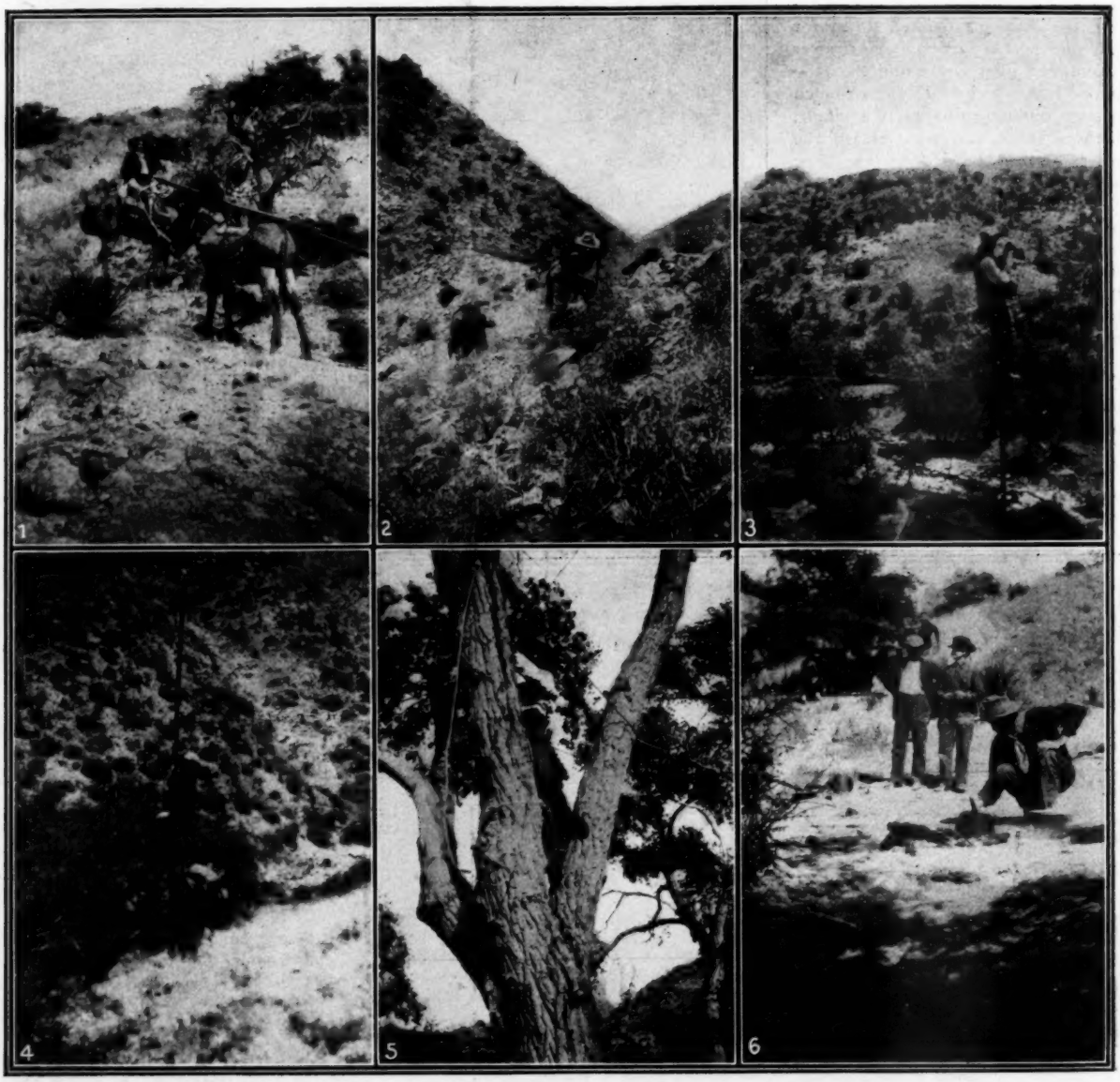
Day after day the work went on under the hot Arizona sun. The deep holes were dug, the iron pipes



The First of the Camp Buildings in the Galiuro Mountains.

set firmly into them and the wire strung from pole to pole as the two gangs of men advanced toward each other.

Fearing a shortage of poles the cottonwood trees at one point in the canyon were utilized. In view No. 5 of the large illustration, one of the men is shown at work in one of these trees. There was a temptation to use the giant cacti in the same way, for they looked so straight and tall as if they had been put there for just such a purpose. But the company was in a hurry to have the job finished and no chances were taken which might lead to doing any part of the work over again. Since, then, however, I have heard of the Suhuaro or giant cactus being used for



Scenes Along the Route While the Reconstruction of the Historic Telephone Line Was in Progress.

telephone poles near Tucson and there is no reason to think that they will not be able to stand as long as the wooden poles.

The laborers in the desert have to adapt themselves to many rough and ready conditions, but there was one thing I noticed among these people, namely that they rarely took cold lunches wrapped up in a paper, even in summer. Almost every group of men who expected to be very far away from the camp dining room at the noon hour, for many days at a time, provided themselves with cooking utensils with which they could prepare their meal of frijoles (pink beans), and a sort of Dutch oven for baking biscuits or corn bread. This part of the day was very pleasant for, after the meal was over, the men would stretch out in the scant shade afforded by a mesquite tree, smoke cigarettes and relax for a few minutes before taking up

The Suhuaro or Giant Cactus Sometimes Used for Poles.

their strenuous work again. View No. 6 of the group illustration shows a scene at one of these noon-time hours. The other views of the same illustration show some of the working conditions along the route.

Then one evening the two gangs of men were in sight of each other, but it was only to find that the poles were all gone with about a mile of the line unfinished. The man in charge of the work decided that poles must be found somewhere to complete the job, as a lineman had been sent out from Tucson to connect up the wires. Well, the poles were found, but it was after hours of skirmishing around, here and there, and everywhere, the men telling their troubles to a dozen or more people before they found the one who could help them out. He supplied them with a number of redwood poles that were lying about an bandoned mine of which he had charge.

Before the job of connecting was finished, it was found that there was not enough wire and also that the pins which had been ordered, had not arrived. There were many jokes at the expense of these fellows, but even the jokers lent a willing hand in hunting up pieces of hardwood that were as quickly whittled into pegs, or contributed a length of wire which did service even though it was of a different size from the rest of the line.

At last the two gangs met and the hardest part of the work was completed. The batteries were connected and the first "Hello" sped over the wire and proclaimed the work a success. The line became once more a thing of life with messages flying along it; not messages of terror and frantic calls for help, but matter-of-fact businesslike orders for drills and picks, gas engine fixtures and food supplies. In its modern service, the line lacks none of the romance that surrounded it during the Indian days, for now it is taking its part in the development of one of the great industries of the mighty West.

Meeting of Michigan Association.

Representatives of 40 Independent telephone companies in the state of Michigan, with a total of over 100,000 telephones, representing an investment of over $12,000,000, attended the annual meeting of the Michigan Independent Telephone & Traffic Association last week, held in the offices of the Citizens Telephone Co., Grand Rapids, Mich.

Aside from the annual election of officers, reports for the past year were heard, and all of them were highly satisfactory. During the year the tolls cleared amounted to $150,000, the business being 99 per cent. intrastate. The bureau was organized for the purpose of acting as a clearing house for the tolls received by various companies and an increase of 6 per cent. over last year was reported.

The officers elected were: C. E. Tarte, president; W. J. Melchers, vice president and W. S. Vivian, secretary and treasurer. Since the organization of the bureau 10 years ago, the same officers have been re-elected annually. But three changes were made in the directorate. The executive committee is composed of the following: C. E. Tarte, W. J. Melchers, W. S. Vivian, Thos. Bromley, J. C. McCabe.

The directors elected are: C. E. Tarte, Citizens Telephone Co., Grand Rapids, Mich; W. J. Melchers, Union Telephone Co., Owosso, Mich.; Frank M. Howard, Southern Michigan Telephone Co., Burr Oak, Mich.; R. C. Smith, Calhoun County Telephone Co., Homer, Mich.; C. O. Trask, Valley Home Telephone Co., Saginaw, Mich.; E. B. Fisher, Citizens Telephone Co., Grand Rapids, Mich.; L. L. Conn, Union Telephone Co., Owosso, Mich.; A. C. Himebaugh, Southern Michigan Telephone Co., Burr Oak, Mich.; W. S. Vivian, Michigan Independent Telephone & Traffic Association, Grand Rapids, Mich.; Thomas Bromley, Jr., United Home Telephone Co., Ludington, Mich.; A. E. Wells, Citizens Telephone Co., Grand Rapids, Mich.; N. F. Wing, Home Telephone Co., of Grass Lake, Grass Lake, Mich.; J. C. McCabe, Valley Home Telephone Co., Bay City, Mich.; C. E. Smith, Citizens Telephone Co., Grand Rapids, Mich.

Knights Templar Parade Handled by Telephone.

The gigantic Knights Templar parade at the recent Denver conclave, in which 40,000 knights were in line, was directed entirely by telephone by General John Chase and his committee of assistants. A special central switchboard was installed at conclave headquarters and telephones were placed at short intervals along the line of march. In this manner the committee was kept in direct touch with the movements and progress of the army of marching knights.

Besides the host of Sir Knights who were in attendance at the conclave, there were over 100,000 visitors in the city, and unusual and careful plans were prepared for their care and comfort. Special plans were arranged by telephone company in anticipation of the great increase in the number of telephone calls during the conclave.

For a long time prior to the conclave the company was busy installing emergency telephones, additional switchboard facilities and training the 150 extra operators who were required to assist the regular force in handling the calls. Over 250 emergency telephones were connected with the newspapers and hotels and information bureaus, and at various places along the streets telephones connected with the central exchange were provided for the convenience of the visitors.

Queries on Theory and Practice

Grounding the Common Return.

Is it advisable in a small exchange of 200 lines or over to use a common return system, free from ground? That is, to cut the arrester rack metallic, connect the sleeve side to the common battery return and keep the common return from ground at all points.

As far as cross talk is concerned, it makes no difference whether the common return is insulated or grounded. To keep it insulated will assist in reducing noises from foreign influences, such as lightning, earth currents, trolley circuits, etc. If the return is kept insulated, it must be provided with a large lightning arrester, as it will have to take the static discharge from a great deal of wire. It will also have to be watched carefully, for a ground on the common return is harder to find than a ground on a line, because the common return has so many branches.

Whenever any of the lines are plugged up to a grounded line from outside the exchange, a repeating coil should be used to keep the system insulated. Balance up the bother against the advantages and decide which is worth the more to you.

Locating Faults in Magneto Multiple Switchboard.

The accompanying diagram shows the circuits of a magneto branching multiple board. Will you please show through TELEPHONY, how the tone test, or any other, can be applied for locating faults on the switchboard without noising up other circuits. This for faults shown at *A*, *B*, and *C*.

The principles of a tone test for locating a cross in the multiple are shown in Fig. 2-*A*. Let the small circles at 1, 2, 3, etc., represent contacts. Assume that the cross is between the ring and sleeve at *X*. Short circuit one of the bad wires (ring) and the good wire (tip) at *P*. At the other end attach the tone coil to the wires which are short circuited at *P*. The tone current will flow along the tip wire to *P* and back along the ring wire. Take a good sensitive head receiver and connect across the two bad wires as shown at *R*-1. A tone will be heard, due to the fall of potential from "2" to *X*. Keep testing from jack to jack. As you move away from the tone coil toward the cross at *X*, the tone heard will become weaker. It will be zero at *X*, if the cross is in or very near a jack. If the cross is between two jacks, you will get only a minimum of loudness.

The tone current must be strong, the stronger the better.

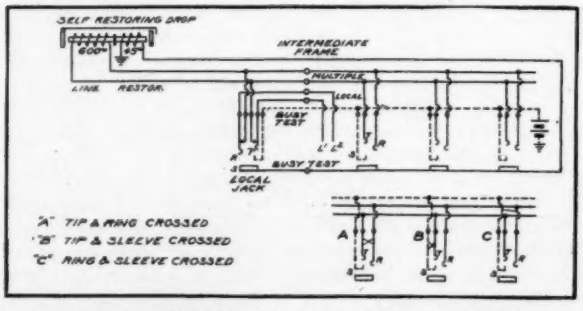


Fig. 1. Circuit of Magneto Multiple Branching Board.

The source of tone current must be clear of earth. If it is an induction coil, the secondary must not be connected to the earth, directly or indirectly.

If one of the three wires is a heavy wire (low resistance), avoid using it as the side of the loop upon which the fall of the potential depends. If the heavy wire is one of the crossed wires, do not let it be in the loop at all. The "loop" means the two wires, short circuited at *P*, which carry the tone current.

If you have difficulty in comparing loudness of tone from one jack to the next, use the comparing key of Fig. 2-*B*. Mount eight binding posts and a key on a small block of wood. The two posts for the receiver may be replaced by a jack to fit an operator's receiver plug. Attach

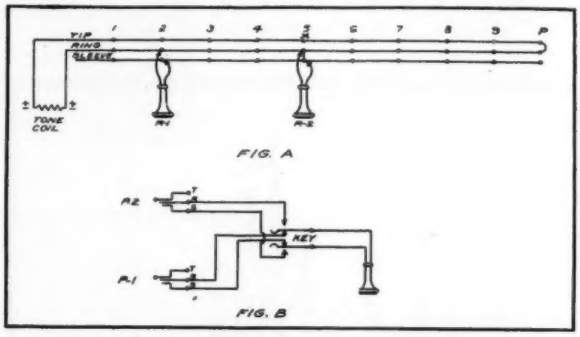


Fig. 2. Principles of Test to Locate Cross—Comparing Key.

the two plugs and cords (*P*-1 and *P*-2) and insert them in adjacent jacks on the line to be tested. Connect the key springs to the proper plug conductors so as to bring the receiver into connection with the desired wires in the multiple. By throwing the key back and forth, the loudness can be compared to a nicety and the cross in the multiple located quite exactly.

Be sure to disconnect the multiple wires from others at the intermediate distributing frame, and at the main frame also.

A Grounded Talking Circuit.

Will it be possible to use the talking circuit with one end grounded? That is, having the primary of the induction coil connected with the transmitter and battery and then to ground, and the secondary of the coil with the receiver connected to a metallic circuit.

The circuit which you propose in your sketch can not be used because you have no return path for the transmitter battery. You have poled all the batteries negative to earth and positive to the transmitter, and through the primary to line. If you will tell us the object of such a circuit arrangement, we may be able to advise you of a scheme which will work.

If your line is subject to induction, the ground will make it noisy.

Telephone Service in National Forests.

Rangers of the United States forest service erected 1,045 miles of telephone line within the national forests of Washington and Oregon during the year from July 1, 1912, to July 1, 1913. This gives a total of 2,560 miles of telephone lines within the district. The lines are largely used for fire protection work and all terminate at the office of the supervisor of the forest, located in the town nearest the reserve. To him come all the calls. A ranger may be on the crest of the Cascades and spy a fire 20 miles away. He telephones to the supervisor and in 10 minutes anywhere from two to a dozen men, equipped with all the latest fire apparatus loaded on horses and mules are hurrying to the scene from the nearest ranger station.

Proceedings Before Commissions, Courts and Councils

Discussions and Rulings of State Bodies Having Supervision of Telephone Companies, Decisions of Courts in Matters Affecting Public Relations of Utilities, and Actions of City Councils Bearing Upon Franchises, Rates and Service

Members of New Ohio Public Utilities Commission.

Governor Cox of Ohio has appointed Oliver H. Hughes, of Hillsboro; Judge William L. Dechant, of Middletown, and Edward W. Doty, of Cleveland, as members of the Ohio Public Utilities Commission, which supercedes the old public service commission. Mr. Hughes was a member of the old commission. Judge Dechant has been a judge and a banker and has had much experience with electric light, railway, gas, and steam railway companies. He succeeds John C. Sullivan, of Hamilton. Edward W. Doty has been a member of the legislature. He succeeds Oliver P. Gothlin, of Dayton, who will remain with the commission in charge of a bureau devoted to shippers.

Pioneer Will Not Contest Physical Connection Ruling.

The Pioneer Telephone & Telegraph Co. has notified the Oklahoma Corporation Commission of its intention to comply with the order for physical connections with the Grant County Rural Telephone Co., in accordance with the recent decision of the state supreme court, affirming finally the order of the commission. This is the case that the company at first contemplated taking to the United States Supreme Court on the ground of confiscation.

Definite Step Towards County Ownership at Lincoln, Neb.

A petition signed by 1,615 voters of the county in which Lincoln, Neb., is located has been filed with the county commissioners asking that the question of establishing an Independent county-owned telephone system be submitted to the voters. The petition is filed under the provisions of the Fuller law enacted by the last state legislature. The commissioners, it is said, are undecided whether to call a special election or defer action until the regular election next year.

Switching Charge Order of South Dakota Commissioners.

The Board of Railroad Commissioners of South Dakota has issued an order in the matter of the complaint of the Ardmore Telephone Co. against the Edgemont Telephone Co. in connection with switching charges. The case was decided upon an agreed statement of facts. The Edgemont Telephone Co. operates an exchange at Edgemont consisting of 103 local and 44 rural subscribers and the Ardmore Telephone Co. operates an exchange at Ardmore consisting of 21 city subscribers and 41 rural subscribers, the figures in either case being exclusive of 23 rural subscribers on the line between Ardmore and Edgemont. The practice has been for the Ardmore Telephone Co. to pay $5 per month for switching service, a practice which it refuses to continue. It was the desire of the two companies that the commissioners decide the controversy upon the basis of a flat rate rather than an individual toll or rate for each message.

The commissioners point out that the presumption is that the $5 charge as demanded and paid on the theory that the company having the greater number of telephones was entitled to be reimbursed for the service it would give in excess of the service it would receive. The soundness of this presumption is declared to be open to question. The value of the interchange of service to the patrons of either exchange would depend on the relative use made of it, and when it is considered that the service has a value to the parties called as well as to those calling, it does not appear that the service is much more valuable to one company than to another. Considering the companies as entities distinct from their individual patrons, neither would have much advantage over the other, but it may be that the cost of handling the service would not be the same for the two companies, in which event an adjustment would have to be made on the basis of cost.

In regard to the request of the companies that the compensation be fixed upon the basis of a flat rate the commissioners hold that this plan is defective and against public policy because it places the burden of the added cost upon one of the companies instead of upon the patrons of both companies who are responsible for the calls, and for the further reason that the law recognizes a flat monthly charge only for rural line service. It is pointed out that he commission has, in a recent general order, held that each telephone exchange and all lines operated by it in connection therewith, as well as all lines connected with it on a switching basis, constitutes a unit, and further that the intercommunication between subscribers of a local exchange and its connecting lines is properly considered as exchange business and when there is communication over a line between two exchanges or units it is properly considered as toll business and toll messages should be transmitted over lines to which no other instruments are attached.

The commission rules that the physical connection be continued with a toll charge of 10 cents per completed call, the total toll revenues to be divided equally between the two companies, and that the 23 subscribers on the Ardmore rural line connecting Ardmore and Edgemont be allowed to have switching privileges over the Edgemont exchange upon payment of not to exceed 25 cents per month per telephone, if they so desire. It is ordered that if upon trial the business is of much volume, a wire independent of the rural line be installed.

Personnel of Pennsylvania Commission.

Governor Tener of Pennsylvania recently appointed the following seven commissioners as members of the new Pennsylvania Public Utilities Commission:

Nathaniel Ewing, head of the former railroad commission, chairman, for a 10-year term. S. Larue Tone, general manager and chief engineer of the Pittsburg Railways Co., nine-year term. Samuel W. Pennypacker, ex-governor and a member of the old railroad commission, eight-year term. Emory R. Johnson, of Philadelphia, professor of transportation and commerce expert of the University of Pennsylvania, seven-year term. Milton J. Brecht, member of the old railroad commission, and ex-county school superintendent, six-year term. Charles Frederick Wright, ex-state treasurer, five-year term. Frank M. Wallace, Erie, a banker, four-year term.

Prof. Emory Richard Johnson is recognized as one of the leading experts of the country on transportation. He was born in Waupon, Wis., in March, 1864. In 1888 he received the degree of B. L. in the University of Wisconsin, and in 1893 the degree of Ph. D. in the University of Pennsylvania. He was instructor in economics in Haverford College from 1893 to 1896, in which year he was chosen professor of transportation and commerce in the University of Pennsylvania. He was a member of the United States Industrial Commis-

sion in 1899, and from that year to 1904 he served as a member of the Isthmian Canal Commission. In the year following Professor Johnson was the expert on valuation of railroad property for the United States Census Bureau. In 1909 he was engaged as a traffic expert for the National Waterways Commisison. He was appointed by President Taft in 1911 to report on Panama canal traffic, tolls and measurement of vessels. Since 1901 Professor Johnson has been the editor of Annals of the American Academy of Political & Social Science. He was chosen to arbitrate the dispute between the Southern Pacific Railroad and the Order of Railroad Telegraphers in 1907. He is a member of the board of collaborators preparing an economic history of the United States for the Carnegie Institute. He is the president of the Geographic Society of Philadelphia and a member of the American Economic Association, National Geographic Society, Association of American Geographers, Historical Society and is a director of the Philadelphia Maritime Exchange. He also belongs to the Cosmos Club of Washington.

S. Larue Tone is a graduate of Rensselear Polytechnic Institute, of Troy, N. Y., and has served 20 years with the Pittsburgh Railways Company, having charge over engineering, power and operating departments.

Charles Frederick Wright was educated in the Montrose Academy. He served as cashier in the First National Bank of Susquehanna and is now vice-president of that institution. He is also interested in manufacturing and water power enterprises. He was elected to Congress in 1898, 1900 and 1902. He was appointed treasurer of Pennsylvania by Governor Stuart, in April, 1910.

Frank M. Wallace is president of the Second National Bank of Erie, has charge of the Strong estate and other large interests and is treasurer of the Pittsburgh Coal Co.

The attorney general of the state will be the commission's general counsel, under the provisions of the act, although it is stated that the attorney general will name William N. Trinkle, of Philadelphia, a deputy attorney general, as chief counsel of the commission. The commission will elect a secretary, investigator of accidents, a marshal and other officers.

The chairman of the new commission will receive $10,500 a year, while the others will get $10,000 a year each.

Improvements at Conway, Ark., Not Adequate.

Steps were recently taken at a meeting of the city council of Conway, Ark., to prevent the Southwestern Telephone & Telegraph Co. from raising the rental rates on telephones under a schedule which the company had announced would be made effective on September 1.

Shortly after purchasing the Conway exchange for $25,000 the company induced a large number of its subscribers to sign petitions for an increase in rates to be made effective upon the rebuilding of the entire system and the installation of metallic circuits. The rates for residence service were to be $2.00 per month instead of $1.50 and for business service $2.75 per month instead of $2.00. The contemplated improvements were made under this arrangement, but the public still complains of poor service.

The franchise of the company is not an exclusive one, and it is said that a local company will be formed and install an exchange if no relief can be obtained through the courts or the city council.

Suit Against Bell Company in Arkansas.

The Supreme Court of Arkansas will be asked to affirm a decision of the Chancery Court of Mississippi county, Ark., wherein the Memphis Telephone Co., of Memphis, Tenn., secured a judgment of $35,000 against the Southwestern Telephone & Telegraph Co. for alleged breach of contract.

Manager Polk of the Memphis Telephone Co. is quoted as stating that the suit grew out of the sale of the Osceola Telephone Co., of Osceola, Ark., through which connection between the Memphis Telephone Co. and the Osceola Telephone Co. was broken off and a 25-year contract was annulled by order, he says, of the Cumberland Telephone & Telegraph Co.

"Breaking this connection," said Mr. Polk, "completely shut out the Memphis Telephone Co. from any business over the Osceola lines and greatly hampered its plans."

Chicago Telephone Co. Increases Toll Rates.

The Elgin (Ill.) News reports that the Chicago Telephone Co. has quietly increased its toll rates from Elgin to nearby points. The rate from Elgin to Geneva is now 10 cents instead of 5 cents; to Aurora 15 cents instead of 10 cents; to Batavia 15 cents instead of 10 cents, to Bartlett 10 cents instead of 5 cents and to Roselle 15 cents instead of 10 cents. Reductions have been made in toll charges from Elgin to Bensenville, McHenry and Oak Park. The rate to Bensenville is 15 cents instead of 20 cents; to McHenry 15 cents instead of 20 cents and to Oak Park 20 cents instead of 25 cents.

Rates remain unchanged to Dundee, Carpentersville, Cary, Harvard, Lake Geneva, Libertyville, Lombard, Marengo, St. Charles, Union, Huntly, Wheaton, West Chicago, Woodstock and Waukegon. The rate to Rockford remains the same for a three-minute conversation. For every minute or fraction of a minute over that period, 10 cents will be charged, instead of 5 cents.

It is said that within a certain radius the old charge of 5 cents a minute for conversations of more than three minutes' duration will be retained. Outside of the radius, conversations over three minutes will cost 10 cents per minute.

Expansion of Newark Telephone Co.'s System.

At a recent meeting of the stockholders of the Newark Telephone Co., of Newark, N. J., unanimous approval was given to the action of the directors in leasing the Gratiot and Brownsville and the Somerset telephone companies for a period of 99 years. If the state commission approves the action the Gratiot and Brownsville and the Somerset and Glenford exchanges will be made a part of the Newark Telephone Co.'s system, which now embraces exchanges at Newark, Granville and Hanover, with lines running into every section of Licking county and connecting with exchanges at Utica, Homer, Johnstown, Croton, Alexandria, Pataskala, Hebron and Jersey.

By this action the Newark company will control all the Independent telephone lines from Utica to New Lexington in Perry county, with a total of 4,800 telephones.

Manager Hollander is quoted as stating that without doubt the system will have over 5,000 telephones in service by January 1. There are nearly 3,500 telephones in service in the city of Newark alone, making an average of one to approximately every eight people.

Subscribers May Boycott New York Telephone Co.

A petition has been signed by about 70 per cent. of the local telephone subscribers of New Hartford, N. Y., asking the New York Telephone Co. not to enforce its proposed plan of making a five-cent toll charge for suburban service between Utica and New Hartford and other cities. The petition is also an agreement among the subscribers to have their telephones removed if the company persists.

It is said that residents of Whitesboro and New York Mills are taking similar action and an effort is being made through the Utica Chamber of Commerce to secure united opposition to the charge on the part of Utica business men, whose monthly telephone bills will be greatly increased if the rate is enforced.

The Rejuvenation of the Craneville Telephone Exchange

A Story in Serial Form, Telling How a Rundown Telephone Plant Was Rebuilt, Enlarged, and Changed Successively from a Grounded to a Local Battery Metallic System and Later to Common Battery—Fourth Installment

By Paul Hamilton

Big Frank was at the exchange early the morning Mr. Barrows was to take charge of the plant. The new proprietor was likewise early on the job, as Frank had just finished setting things to rights when he came in. It was just a few minutes past seven.

"Good morning Mr. Rice," he exclaimed. "Well, we're here ready for business."

"Good morning, Mr. Barrows. We're here, as you say, but not as ready for business as I wish we were. Would you mind calling me Frank. I don't hear 'Mr. Rice' only about three times a year, and it sounds strange."

"I'm willing to compromise. There are, even in a small business like this, proper times for formality and informality. Our work will be more or less informal and I will agree to drop the 'Mr. Rice,' but among the subscribers or in their presence you will be Mr. Rice. You will represent the Craneville Telephone Exchange, and the position entitles you to a certain degree of dignity and respect. When you introduce yourself to anyone over a telephone, please use the term 'Mr. Rice,' even if you know who is at the other end of the line. It is preferable to say, "This is Mr. Rice,' or 'Mr. Rice speaking.'"

"Now Frank," he continued after a moment's pause, "We're up against a job of considerable size. Our first task will be to put this plant into shape to give reasonable service. In connection with that, we must go a little farther and put into effect rules by which the service shall be handled, namely, operating rules.

"We must get someone who will operate the board courteously and efficiently. I fear Kitty is impossible. Her disposition has become too badly spoiled. Perhaps you know of some young lady who would be willing to take up the work. We must have her here in a day or two."

"I can think of two or three," replied Frank, "any one of whom I can say are good, steady girls, though I think perhaps Nellie Dietz should be given a chance. She worked at the board a short time about a year ago."

"Have her come in and see me tomorrow morning. I'll make up a general outline of the operating rules tonight."

Frank was surprised, for he could not see how any set of rules would apply to answering calls and making connections on the Craneville board. However, he was open to conviction, but thought Mr. Barrows was overdoing it a little.

"I'll see her father tonight," he replied. "He used to work here when we needed an extra hand."

"That reminds me. We are going to require a man or two until we get things straightened out, and perhaps longer than that, for additional construction will be the natural result of a plant in good condition. I prefer local men if I can get them," said Mr. Barrows.

"Well, Mr. Barrows, 'Germany' Dietz is a pretty handy man at telephone work. He can climb and handle line wires, as well as install instruments and 'shoot' trouble. He'd be glad to quit the brickyard even for a temporary job."

"You might bring him around, say Sunday morning. I will know by then a little more definitely as to what we require."

At this moment seven drops fell at once with a clatter. The armature of one continued to vibrate, so Frank answered the call and restored the other shutters.

"That is one of the lines in trouble," Frank remarked. "It talks up all right but whenever they call the exchange, all those drops fall as you see, except on a rainy day. It looks to me like ground trouble but I haven't been able to find it."

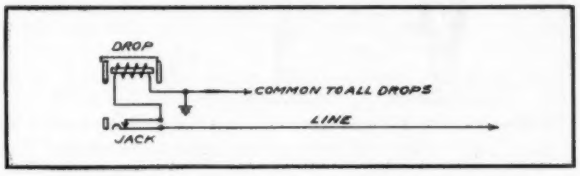


Fig. 1. Drop Circuit of the Craneville Switchboard.

"I was going into those cases with you this morning. What is the circuit of the drops? I have a general idea but haven't it exactly."

"It's like this," answered Frank, making a sketch (Fig. 1.)

"The drops are high wound, I presume?" asked Mr. Barrows.

"Two hundred ohms is all, I think," was Frank's reply.

"Now let's get the locations of these telephones and see if that will help us any."

Frank got the locations from an indexed book.

"We'll transfer those to a card file a little later. It's much more convenient, as all the records of a line will be in one place then," remarked Mr. Barrows as Frank copied the addresses from the book.

"I'm not familiar with the streets. Can you make a rough sketch or give approximate locations and relative distance from the exchange?"

"They are all within a couple of blocks. It's the same bunch that fell the other day. There are two more of them that fall sometimes. Want them in the list?"

"Where are they located—about the same distance?"

"Yes, sir. They all run over the same lead, and the wires are clear I'm sure," replied Frank.

"How are these lines grounded?"

"With five-foot, three-eighth's inch ground rods."

"What have we for an office ground?"

"An inch iron ground rod, I believe."

"Is it protected in any way at the ground line?"

"No, sir. It's just driven into the ground the same as any ground rod," replied Frank. "There's a No. 4 copper wire running from it to the bus bar in the board."

"As we haven't a portable bridge, we'll use the next best thing we have to make a test. Perhaps we can locate our trouble. I have with me an ordinary head receiver which is the most useful instrument we have in testing and clearing trouble. This one measures about 80 ohms. Now, if you will open two of those lines and bring the line direct to me here at the bus bar, we'll make a test. I'm going to open the main ground. That will put the board out for a few minutes.

"Now, hold that side of the receiver to battery. Those six cells will answer the purpose, I guess. They are not grounded on this lead, are they?"

"No, they have a separate ground on the other side of the building."

"Very well. Now I'll test to the main ground next to one of the lines and then to the other. Here, take the receiver. This is the main ground and these are the two lines. Do you notice any difference?"

"Yes, I think I can," replied Frank. "Let me try it again. I'd say the lines gave the loudest click."

"I agree with you, and we will investigate our main

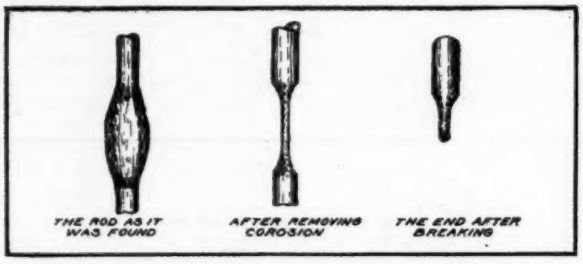


Fig. 2. The Condition of the Office Ground Rod.

ground. But before we do anything else we will run a temporary ground to that water pipe. Does the water system extend over the whole town?"

"Not yet. Just the central part so far, along Main street and a block or two each way."

"Well, we will transfer all grounds to water pipes where we can. Of course we cannot use it for our office ground except in emergencies like this one. What have you in the way of wire for a temporary ground?"

"There's a little No. 12 copper under the bench. Here it is."

"That will do nicely. Now, scrape the paint from that water pipe and I'll fix up a ground clamp. I don't suppose there is such a thing in stock?"

"No, we never have used any," Frank replied.

"Well, here's a machine bolt, a couple of nuts, and this piece of tin will do for a strap. Now loop the wire around above the bolt and screw the nut down on the bolt. That will answer our purpose. Now, we will remove the old ground and put the copper wire in its place. Kitty is in the front office now and we can go out and look at the ground rod. Is the night alarm on?"

"Oh yes. It's never off," answered Frank. "I cut the switch out a year ago because Kitty would turn it off and forget to turn the switch when she went into the office. For hours at a time people could not get the exchange."

"We'll cut the switch in again later and find some way to give the subscribers prompt attention. Now, let's look at the ground rod."

The ground rod was located near the foundation wall of the building and extended about 15 inches above the ground. The copper wire was attached to it in an unworkmanlike manner, but was apparently secure and making good contact.

Mr. Barrows took hold of the rod and gave it a steady pull to one side. It gave perceptibly and did not spring back when he released it.

"Get a shovel. Let us dig down and see what we can find," he said.

"This rod has been here seven years, I presume, and being unprotected has rusted to some extent. Be careful and don't disturb it with the shovel. I wish to see its exact condition. There, that will be deep enough. Dig back a little farther to give us plenty of room. There, that will do."

Mr. Barrows then carefully removed the dirt from around the rod. At a point about eight inches below the ground, there was an enlargement (Fig. 2) in the rod about two inches in diameter and about four inches long. The slight bend Mr. Barrows had given the rod had cracked this shell of rust and corrosion.

With a knife blade, the enlargement was removed, coming off in scales, until for a distance of an inch in what had been the center of the bulge, the rod was little less than a half-inch in diameter.

"You see the rod is pretty well eaten away. We might as well finish the job," said Mr. Barrows.

Taking hold of the top of the rod, he pulled it away from the embankment and it parted at the rusted place. Looking at the end of it, there was less than a quarter of an inch of iron (Fig. 2) and that, by its discoloration, showed signs of decay.

"Now, we will need a new ground for sure."

"Won't we find some of our instrument grounds in the same condition?" inquired Frank.

"Very likely, but we will have to go after them in a different way. It will not do to go about it promiscuously and dig here and there. By the time we're ready to go into that, we'll have some equipment for testing the resistance of lines and grounds. No doubt some of the line wire is in a similar condition."

"I'm sure of that," replied Frank. "Some of it will break almost at a touch."

"We will come to that in time. Our job now is to put in a good ground here. We'll dig a pit under this water spout and bury a couple of coils of galvanized wire, say No. 12. I saw some down at the hardware store that will answer."

"How deep shall we go?" Frank inquired.

"That depends upon the soil. We must find permanent moisture, a strata of sandy soil or gravel."

"That will be five or six feet, I guess," replied Frank.

"Very well. Then we must fill the pit with sand and gravel so that the water from this spout will find its way

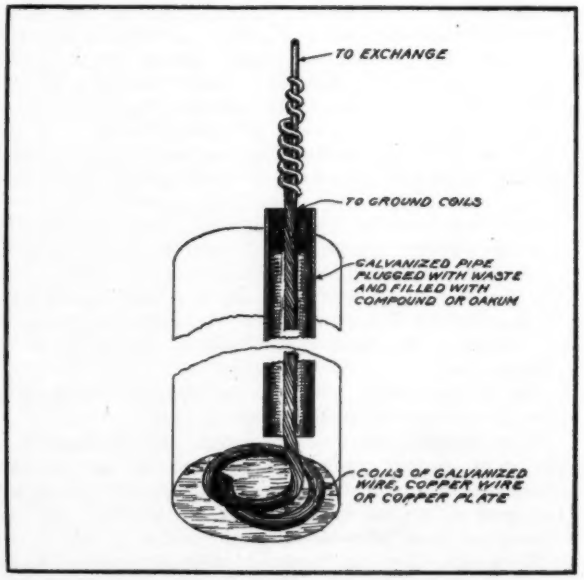

TO EXCHANGE
TO GROUND COILS
GALVANIZED PIPE PLUGGED WITH WASTE AND FILLED WITH COMPOUND OR OAKUM
COILS OF GALVANIZED WIRE, COPPER WIRE OR COPPER PLATE

Fig. 3. The Type of the New Office Ground.

down. Have you a heavy soldering iron or, better still, a blow torch?"

"No, but I can get a torch from the plumber next door," was Frank's answer.

"I don't like to begin borrowing, but in this case perhaps it will be necessary. I want to bring up the four ends of

the two coils of wire through a galvanized pipe. As we twist them together, we will solder them in two or three places, besides blowing a little solder into the coils in the pit. Then we must solder the connection to the copper wire leading to the switchboard."

When the job was completed the following day, it was as shown in Fig. 3.

(To be continued.)

Well Known Engineer to Enter Private Practice.

Early this month, L. C. Griffitts, who has been general manager of the Interstate Independent Telephone & Telegraph Co., of Aurora, Ill., for something over a year, will establish himself in practice as consulting engineer, specializing in public utility work of every nature. Mr. Griffitts is one of the best posted and most widely known engineers in the utility field.

L. C. Griffitts.

Mr. Griffitts has practically perfected the details of an organization, in which he will have associated with him some of the brightest engineers in the various branches of public utility activity. Definite announcement of the personnel of this organization will be made later.

In addition to the men who are associated directly with him, Mr. Griffitts has arranged for consultation with specialists in every line of utility engineering. No problem, therefore, can arise which he or his organization is not fully qualified to handle in accordance with the latest practice, from knowledge based upon long experience. Although the organization is not yet quite complete, it is sufficiently so to ensure the co-operation of the men who will ultimately compose it, as also of the consulting specialists just referred to.

Particular attention is to be given cases before the public utility commissions of the various states having such regulatory bodies and before the Interstate Commerce Commission, and appearances will be made either for the commissions themselves or for the utility corporations under their jurisdiction. This will be but a part of Mr. Griffitt's activities. He will deal with appraisals and valuations of properties, operating engineering, development studies, accounting, etc.

For the present he will maintain his principal office in Aurora, with another in Louisville, Ky., and probably one in Chicago. When the organization is completed, other offices will be opened in the larger cities of the country.

Although relinquishing the general management of the Interstate company, Mr. Griffitts will continue to be associated, as consulting engineer, with that corporation. He has also established similar relations with a number of large utility companies, both in the telephone and other fields, and will, from time to time, add others.

Mr. Griffitts has been connected with the telephone business since 1897, when, as he puts it, he became "flunkie" for the Bell company at Knoxville, Tenn. During the next four years he was stationed at several points, learning the business from the troubleman's job up to that of the manager. In 1901 he accepted a position with the Southern Bell, at Decatur, Ala., covering a territory in which desperate war was being waged against the Central Home Telephone & Telegraph Co., of Louisville, Ky. Five years later, in 1906, he became special representative of the general manager of the latter company. He was afterward assistant superintendent, engineer and general engineer for this corporation, remaining actively connected with it until, in July, 1912, he went to Aurora to assume the general management of the Interstate. His record there is too well known to need repetition here. The property, which had been tossed back and forth and sadly neglected by conflicting interests for years, was in a badly rundown condition. The physical plant had to be largely rebuilt, the staff of employes weeded out and strengthened, and the entire operating machinery systematized. This desperate job Mr. Griffitts tackled with his usual energy and shortly succeeded in bringing a notable degree of order out of the chaos. Last July he decided to enter the practice of his profession along the lines here suggested, but was induced by the directors of the Interstate to remain until now. He will continue to devote a portion of his time to the Interstate's affairs, in his capacity of consulting engineer.

In 1911 Mr. Griffitts bought a controlling interest in the Glasgow Home Telephone & Telegraph Co., of Glasgow, Ky., and assumed the active management of the property. The next year he bought control of the Seymour Mutual Telephone Co., at Seymour, Ind., and has since managed that corporation also. He owns a number of toll lines in the vicinity of these two towns and is steadily building and buying more. He is also taking over local plants in different states and his holdings are increasing rapidly.

How Independent Telephony Benefits Atlanta.

The September issue of the Atlanta Phone Register, a supplement of the directory of the Atlanta Telephone & Telegraph Co., contains an alphabetical list of 175 new subscribers obtained by the company during the month of August. On the first page of Register appears the following interesting statement to the public:

YOUR TELEPHONE AND FALL BUSINESS.

"Merchants who use our service tell us that the Atlanta telephone is one of their best business-getters.

Our subscribers are encouraged to use the Atlanta telephone for shopping purposes, not only because of the uniform efficiency and courtesy of our service, but because they receive a big, practical aid from the classified business directory that makes up a part of our regular directory.

Prospects for active trade this fall are particularly good in Atlanta, and the business man who is using our service is sure to get his full share of it. We are putting in more business telephones every month. The largest and most successful business houses in Atlanta, which have long been routing their calls by preference over our wires, are in many instances increasing their Atlanta telephone equipment.

The city of Atlanta, by the way, is one of the best telephone cities in the United States. With healthy competition still alive here, Atlantaians are getting all its benefits, including a cheaper minimum telephone rate than is enjoyed by any other American city in which Independent competition has been eliminated.

The question of telephone competition is one which is occupying the attention of the courts and public mind all over the country. The Interstate Commerce Commission is conducting exhaustive investigations, and cities where competition has been cut out, claim that they are suffering not only higher rates, but from a deterioration in the quality of service.

Atlanta is one of the large cities in this country where a man can have a telephone in his home for 8 1-3 cents a day."

Be a Live Wire! Read Carefully Your Trade Journal

First of a Series of Articles Which Will Appear Monthly—Co-operation Essential to Knowledge—"Getting Together" Spirit Fostered by Trade Papers—Readers Are Given a Clearer Vision, a Broader Outlook and a Bigger Heart

By Elbert Hubbard

"Knowledge is power," said Francis Bacon. No bullet ever shot by mental Mauser ever found a truer billet, for now it is pretty generally acknowledged that this aphorism of Bacon's is a prime factor in bringing home the succulent breakfast edible that bears his illustrious name.

So everywhere we have the spectacle of eager men and women searching for the springs of knowledge. Why? Oh, so as to get a living, increase your bank balance, and fight off the sniffing wolf at the front door. We are recognizing the supreme importance of the here and the now, seeking for ideas and ideals that will improve our efficiency, poise and power.

In these strenuous days, ists and isms have to bear the scrutiny of reason and the test of common sense and truth. Superficiality gives way to specialty. The smatterer, the literary hobo of commercialism, is succeeded by the business man whose knowledge is based on scientific principles, those of intimate knowledge of cause, effect and values.

And, paradoxical though it may appear, it is this very specialization, this narrowing down to defined, indelible issues that gives us a wider outlook and a fuller education. Provincialism retards growth. We need to become unversalists and to think and act imperially.

"I can't get San Francisco to answer," said a Chicago telegraph operator on the morning of April 16, 1906.

"Well, try again," was the answer, "and then if no reply comes, call up New York and tell them to call London, and have London call Yokahoma, and Yokahoma will call San Francisco." And in half an hour the dread news came.

The Standard of Dealing.

"Mine and thine," was the yardstick of old-time business relationship—with the thumb covering an inch at the "thine" end! "Ours" is now becoming the standard of dealing, and business men know this as the foundation of all successful business. And so, to seek knowledge anent the goods you sell, or the service you offer, is not only profitable monetarily but morally. You become part of the commodities you deal in. They mirror your character and personality.

And no man who realizes this truth will offer inferior goods or wretched service. He gives the best he has to his customers and they couple his name with his commodity. Examples of this are on every hand, and "There's a reason." The perfect knowledge obtained by the merchant, artisan, advertiser or business man impels him to seek the best means and the best wares for his customer. Also, knowledge gives him courage, enthusiasm, hope, animation.

Everything must be "all wool and a yard wide." Also, he must know why it is all wool and a yard wide, and impart that information to the prospective buyer. So knowledge, therefore, is not simply a question of absorption—it grows by giving. And this growth by giving, presumes and proves co-operation. No man can lay claim to education without co-operation. No man can hope for business success, unless he gets a grip of that truth.

It is by the perfect understanding of the needs of his customers that the man who "serves" is enabled to cater to them. Call it psychology if you like—it is co-operation. And it is not only necessary that this co-operate understanding be between buyer and seller to build up a successful business; it must exist between buyer and buyer, dealer and dealer, business man and business man.

In the old days, business men cut each other's throats. Later they cut prices. Then they cut acquaintance. Now they co-operate. The inane competition, born of selfish rivalry which has only one object—success through the failure and elimination of a competitor—is now almost non-existent.

Modern Competition Friendly Rivalry.

The competition that obtains nowadays is that of friendly rivalry, based on trustfulness, which seeks to merit success. It is emulation; a noble effort to obtain the highest excellence and give the highest good by sustained effort and applied intelligence.

The one-price system and the fulfillment of "promises" have contributed largely to this desirable condition and friendly feeling between business men and business houses. All this has been the result of education. The truths of fraternity and the square deal have been assimilated until they have become the lifeblood of industrial and commercial activity.

It is to meet the requirements of these new economic conditions, this thirst for special information on specific subjects, that we have offered to us technical and commercial courses by various schools and colleges throughout the United States. And thousands have benefited thereby. But if I were asked what I consider the chief medium of instruction and helpfulness for the business man of today, I should unhesitatingly say his *trade, technical,* or *class paper.*

The very fact of being a subscriber and paying for his specific paper, is an education in itself. It tokens a healthful interest in what others are doing in the same line of business, and is bound to make a man a better dealer and a better citizen. Getting together is the big slogan of today.

Any individual who is alone, whether he realizes it or not, is on the slide to limbus. We succeed only as we move with other people. The man who subscribes to, and reads his trade paper, is en rapport with men and things. He is no atrophied anthropoid or paleolithic anthropophagi, with head growing beneath his shoulders.

He is a glowing coal. A live wire! He is in the line of evolution. The genesis of all correspondence schools and courses was a mining paper, run in a country district. Now that great institution gives instruction to millions of students all over the world.

The Trade Paper and Knowledge.

And the good trade, technical and specialized papers, published in America today, are fostering and nurturing this knowledge-getting idea. They secure knowledge and give it out. And knowledge is power. Thousands of busy business men and advertisers look to the papers in their field for inspiration and encouragement, and they are not disappointed. Their specialized paper becomes their encyclopedia.

It is a mine from which they quarry the four-square stones upon which to build the fabric of commercial success. Nuggets of wisdom and jewels of thought are added to their stock in trade.

These have been tried in the fire of experience and by the acid test of practicability. Experts and specialists fill the trade paper with contributions of inestimable value to the

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The Wire That Lasts

when exposed to the elements is one which resists the tendency to rapid corrosion. **ROEBLING DOUBLE GALVANIZED TELEPHONE WIRE** is such a wire because it is made from metal of good quality in such a way as to preserve a uniform structure. This causes the galvanizing to **hold and protect** when the wire is spliced thus preventing the cracks through which moisture percolates and brings rust.

The galvanizing itself is the best development of an experience of more than half a century.

John A. Roebling's Sons Co.

Trenton, N. J.

Warehouses: New York Chicago Philadelphia Pittsburgh Cleveland
Savannah, Office Atlanta San Francisco Los Angeles Seattle Portland, Ore.

B&K

Proof

OF THE STRENGTH OF THE

B & K Guy Clamp

unharmed under a strain of 15,260 lbs. A seven strand crucible steel guy rope to which it was attached when tested under a Riehle Tensile Strength Testing Machine, *broke*—the guy clamp was unharmed.

This proves conclusively that the B & K Clamping method is the surest—strongest. B & K guy clamps are economically attached and used. Let us tell you more about it. The B & K pressed steel line catalog on request.

Sample clamp gladly sent gratis.

Barnes & Kobert Mfg. Co.
New Haven, Conn.

TELEPHONE WIRE THAT STANDS THE TEST

The above photograph was taken after the recent Flood o Ohio. Poles down, not a single wire broken

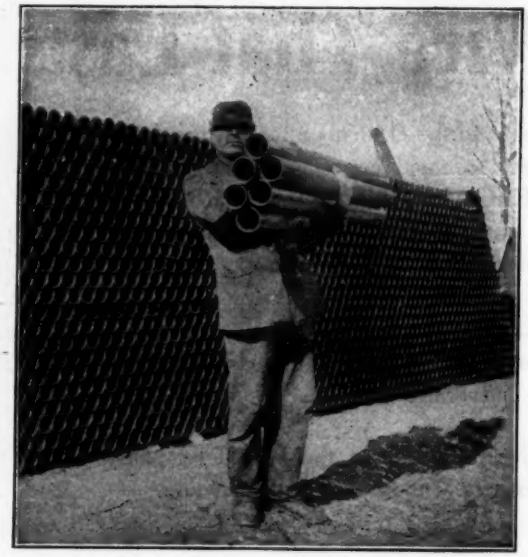
This line was equipped with the **Wire of Quality.** Minimum cost for repairs.

DOES IT PAY TO USE OUR TELEPHONE WIRE?

INDIANA STEEL AND WIRE CO.
MUNCIE INDIANA

WRITE FOR SAMPLES TEST AND COMPARE

HANDLED BY MOST REPRESENTATIVE JOBBERS



Carrying 30 feet 3-inch socket joint conduit.

Orangeburg Fibre Conduit

("Admitted to be the best Fibre Conduit")

Made in FOUR STYLES OF JOINTS

Socket, Sleeve, Screw and Harrington

WITH BENDS AND FITTINGS FOR SAME

Is the lightest conduit made

and means low freight and cartage costs

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THE BROWNELL SYSTEM

of Interchangeable Unit Office Fixtures

Shipped knocked-down and assembled with a screwdriver.
All styles of telephone booths.

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The L & N Type S Portable Testing Set

Accurate—Rugged—Inexpensive

At no sacrifice of quality or accuracy we are now producing an inexpensive Dial Decade Testing Set. The low price of this set is made possible because of a design which has been carefully worked out to admit of advantageous manufacture of parts in quantities. Further, the design is such that assembling is easily and quickly done. Accuracy and the usual Leeds & Northrup reliability have been retained. Our guarantee is behind every set.

Price $60

Let us send you Bulletin No. 530. It describes the set in detail.

The Leeds and Northrup Co. 4901 Stenton Ave., Philadelphia, Pa.

Please tell the Advertiser you saw his Announcement in TELEPHONY.

reader. The well-written columns are filled with advice, information and suggestions. Is it any cause for wonder, therefore, that the subscriber is optimistic, prosperous, respected?

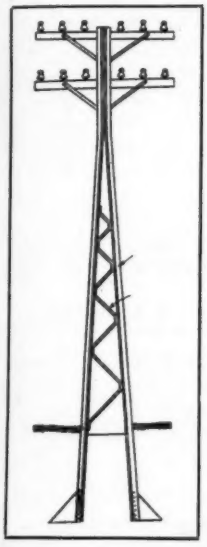
"As iron sharpeneth iron, so does man the countenance of his friend." And the trade paper gives to its readers a clearer vision, a broader outlook, a bigger heart. It keeps him from becoming mean, small, petty, pestiferous with bats in his belfry. It enables him to get a better knowledge of his goods and service. It shows him how to handle these goods and render that service to the mutual advantage of himself and his customer.

It teaches him that all men are brethren; that nothing goes but truth. That variety in form, color and expression are all in Nature's scheme. And realizing these things, he becomes a better salesman, a better craftsman, a better man. His "techiness" gives place to tolerance, and he becomes an interested, enthused business man whose religion is to be good and whose business is his religion.

From Factory and Salesroom

Carbo-Steel Poles.

The utilization of high carbon steel, the adoption of a biped form of construction designed especially to resist strains across the line and anchorage beneath the ground of a carbo base, are the three principal features embodied in the carbo-steel pole made for telephone use by the Carbo-Steel Post Co., Chicago Heights, Ill. For leads having short spans and carrying a small number of wires, the company makes one-legged carbo-steel poles in lengths up to 20 feet, but special reference is here made to the biped type shown in the accompanying illustration. This, the company believes, is the correct solution of the problem of providing a suitable substitute for the wood pole for general use.



Biped Pole.

In the construction of this pole the designers proceeded on the theory that poles should be constructed primarily to withstand strains across the line, and that it should not be necessary, with a properly constructed line, for the poles to have any great strength in the direction of the line. In other words, it was held that the spans should be short enough and the wire large enough to prevent wire breakage in winds blowing from 60 to 100 miles per hour and under any sleet strains likely to be superimposed on the lines. With the possibility of wire breakage removed, the pole line would be maintained in equilibrium and the duty of the poles would be principally that of standing up under the lateral strain. A wood or concrete pole on the contrary, being of circular section, is not more resistant to lateral strain than to strain in the direction of the line.

The carbo-steel pole is about half the weight of a wood pole, which means a reduction in the cost of setting and a reduction in freight charges on long distance shipments, and as the poles are shipped nested, many more can be loaded in a car or wagon than in transporting wood poles. The carbo-steel poles are sold completely finished and painted, and standard crossarms can be easily bolted on the poles, no special hardware being required in connection with this work.

An interesting comparison of the cost of installing carbo-steel and wood poles has been made by the Carbo Steel Post Co. For this purpose the cost of setting wood poles, under average Chicago conditions, 1900-1910, was as follows, according to the figures submitted by the company:

30 ft. pole, wood poles, six-inch top, cost in rough	$3.06
Pole yard shaving	1.10
Painting	.35
Paint	.16
First cost	$4.67
Hauling	.45
Setting	3.50
	$8.61

A carbo-steel pole of biped type 30 ft. in height, weighing 127 lbs., and suitable for carrying 10 wires in a 60-mile wind, with an assumed half-inch coating of ice on the wires, sells today at $4.50 in small quantities. This is a saving of 17 cents over the first cost of painted wood poles. In addition there is claimed a saving of one-half in haulage and about $1.00 in setting.

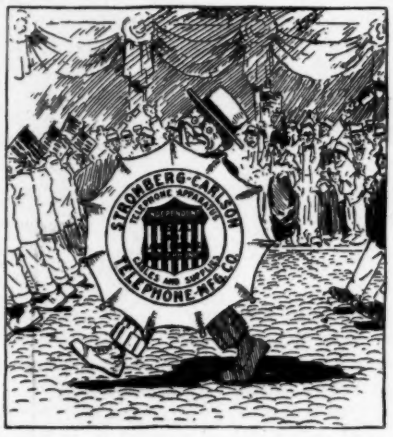
The long life of the carbo-steel pole in comparison with the 10 or 12-year life of wood poles, is an important consideration. Bion J. Arnold of the Board of Supervising Engineers, Chicago Traction, in one of his reports gives the depreciation of steel poles as about one per cent. per annum. It is pointed out by the Carbo Steel Post Co. that the posts in question are low carbon steel which is known to pit on account of many impure spots in the steel. Carbo poles are made of high carbon steel which, it is claimed, will not pit, even if left unpainted. The poles will rust but this can be prevented by an occasional painting. It is stated that at a cost of less than 10 cents per annum a 30 ft. carbo pole can be maintained to give life from 30 to 50 years and at the end of that time will have a scrap value of something like 20 per cent. of its original cost.

The carbo poles are not intended to be set in concrete, for it is said that if set rightly in this manner the weight of the poles would have to be doubled to keep them from breaking off at the ground. This company's solution of the pole problem is the anchoring beneath the ground of the carbo base in connection with the utilization of the flexible steel upright. When the poles are set in soils of an alkali or acid nature the base of the pole is dipped hot in pure asphalt to a point above the ground line. Pure asphalt cannot be used for covering the entire pole for the reason that the asphalt dries up too readily when exposed to the sun, but for use as indicated it is claimed that no better preservative can be found. Pure asphalt is obtainable at a lower cost than paint.

Carbo poles require no placing of steps but are easily climbed by the use of portable stirrups. The poles require no bracing across the line and no special anchoring at any time. Among the various advantages claimed for them, are that they are lightning-proof, insect-proof, dry-rot-proof and fireproof. Furthermore any failure or leakage in the insulation of a transmission system is made known in a positive manner when using steel poles.

Phoney Bill on the First September Morn.

Phoney Bill is back from his recent Canadian trip as full of optimism as ever. In accord with everybody's expectations he was on hand in plenty of time to take part in the grand labor day parade, and the September blotter calendar of the Stromberg-Carlson company has caught the spirit of Phoney Bill's



What Would Labor Day Be Without Phoney Bill?

well known devotion to all that is timely from a patriotic American standpoint. As usual, when Phoney Bill appears in a parade, he is the bystanders' idol and the pride of his following. Unlike the widow woman's only son, he is not the only one in the parade who is keeping step to the music. Phoney Bill says: "Fall in line with Stromberg-Carlson."

Paragraphs.

THE M. W. DUNTON CO., Providence, R. I., announces that an arrangement has been made with Jean Nazly to act as the company's traveling foreign representative. Mr. Nazly speaks eight languages and started on his trip this week. This trip will cover a period of 18 months.

MCROY CLAY WORKS, the Rookery, Chicago, on its September blotter calendar says: A Washington correspondent informs us that President Wilson is bent on the currency question! He is very lucky to be only bent. Most of us are broke on that question."

WM. J. MCKENNA CO., 9 South Clinton Street, Chicago, is now the Chicago agent for the General Insurance Co.

Cook's Pole Terminals.

In the advertisement of Frank B. Cook, Chicago, published on page 13 in the August 30 issue of TELEPHONY, a transposition of captions gave the "type T-29" terminal—for use with pothead" the caption belonging to the "type S-16 terminal, —no pothead necessary," and vice versa. This error was no doubt noticed by our observing readers who are familiar with this apparatus.

Another Victory for Ericsson Telephones.

One hundred years ago Lake Erie was a pretty important place. Perry was hustling around there refusing to "give up the ship". Today Lake Erie is just about as important. At one end of the lake they make Ericsson telephones. Pretty near the other end of the lake they sell them. Not that they don't sell them where they make them, but in that "sixth city" of Cleveland, The Ericsson Mfg. Co. has such a live agency that it almost over-shadows the sales of the home office.

The Erner Electric Co., of Cleveland, took the agency only this year, but in the time it has been working it has shown that Ohio is still a pretty live telephone state, even if they do have to use submarine telephones there part of the year. Incidentally, you should have seen the way some of those wood telephones came out of the flood—and then have seen some of the steel telephones that were wiped off and put right back in service! The Erner Electric Co. has a fine building on St. Clair Ave., only a little way from the monument..

W. C. Sterling Has Fortunate Escape from Auto Accident.

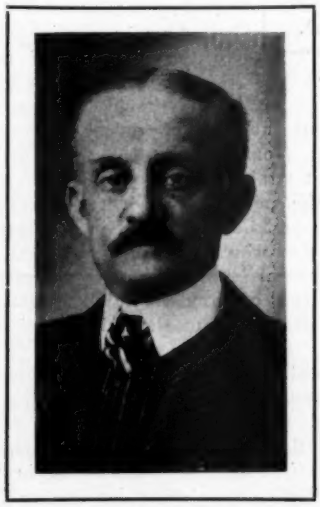
W. C. Sterling, Sr., president of W. C. Sterling & Son Co., Monroe, Mich., and of the Sterling Cedar Lumber Co. and other concerns, is now recovering rapidly from injuries sustained in an automobile accident in which he had a remarkable escape. Mr. Sterling was driving his machine east along Fourth street, Monroe, with a friend beside him and was about to cross the Michigan Central tracks. A locomotive was standing on the track, and almost half way across the street. He was running slowly and ran around the standing engine, and was fairly upon the main track when he saw the northbound passenger train gliding into the station. His action, which saved the two lives, was quick. Instantly upon sighting the train, he turned the machine head-on toward the oncoming train in an effort to get his automobile between the passenger train and the train standing on the siding, knowing he had not time to cross ahead of the flier. Just as the machine was squarely headed toward the train the crash came.

Mr. Sterling was thrown from the machine and sustained three broken ribs and two fractures of the skull, which fortunately have been declared harmless. His companion escaped with minor injuries.

With the collision, the automobile was almost completely wrecked; the engine being driven back under the front seat, and the entire front demolished.

Mr. Sterling's many friends will be glad to know that he is now rapidly improving.

Mr. Sterling is actively engaged in the lumber, coal and ice business in Monroe, in connection with which he has a wide circle of friends throughout the state. By reason of his having been commodore of the Monroe yacht club for several years, and his staunch support of nothing but clean



W. C. Sterling, Sr.

sports in connection with the yachting game, he has many friends in all the ports of the great lakes.

He has been interested at different times in telephone operating and manufacturing companies and the lumber and cedar pole company, of which he is president, is one of the oldest and largest firms continuously in the business.

TALE OF THE TELEPHONE AND TELEGRAPH.

(*Continued from page 25.*)

such an extent that he further financed the enterprise for an exhibition at New York, Philadelphia and Washington. No time was lost in shipping the instruments to these cities and bringing the invention to the attention of members of Congress.

The house committee on commerce, through the enthusiastic help of its chairman, O. J. Smith, of Maine, recommended an appropriation of $30,000 to build an experimental line to try out the invention.

Chairman Smith resigned his seat in the House and became a partner with Morse, Vail and Gale in the enterprise.

Alfred Vail returned at once to the works to prepare machines for Morse and Smith to take to Europe to obtain patents and on May 16, 1838, Morse and Smith sailed. Judge Stephen Vail was still financing the whole plan. Alfred Vail had further improved upon the recording device in the interval by substituting a multiple fountain pen for the troublesome pencils. This was fully completed and in successful operation before Morse saw it. But, of course, once approved by him, it was a Morse invention, same as the alphabet.

Smith returned from Europe in November and again entered politics. Morse remained abroad until April' 1839, having been well received but unable to accomplish anything.

The apathy and indifference of Congress regarding the invention had by this time filled its promotors with discouragement. The Vails had put large sums of money into the enterprise and not one penny had been received in return. Times were hard and it required all of Vail's resources to keep the iron works in motion. He was unable to carry Morse along any further at that time.

So, at the age of 50, without money and, practically alone, Morse showed that confidence in himself which was his sheet anchor in stress of weather and the foundation for an indomitable spirit that never acknowledged defeat. He descended upon Congress for the season of 1839-40 practically unaided, but with a determination and fighting spirit, which in itself, and for the sufferings and deprivations it entailed, duly entitled him to all that the future held in store.

There was an exciting presidential campaign on and members of Congress were more interested in measures seemingly beneficial to their particular party than those for the good of the country at large. The appropriation did not pass.

In December, 1842, Morse made one last despairing effort. The committee on commerce again recommended the appropriation of $300,000. Morse haunted the capitol and shadowed members of Congress until they were seen to cross the street and dodge into doorways to avoid him. The bill passed the House by a close vote and only after a discussion which did no credit to the intelligence of some of the members. Even our own Sam Houston offered an amendment to appropriate part of the sum to the Millerites. In the very last hour of the session, March 3, after the jaded and disappointed inventor had left the senate chamber and gone to bed, feeling sure his bill could not possibly be reached, it passed the senate and became a law by the prompt signature of the president, William Henry Harrison, old "Tippecanoe."

The next morning the news was brought to Morse by Miss Annie G. Ellsworth, daughter of a senator, and for these good tiding Morse promised to let her write the first message that should be sent over the completed trial line to Baltimore. Morse immediately summoned Alfred Vail to his assistance and work was begun as soon as plans could be drawn.

We will not tell the story of the trials and failures of the attempted underground construction at that time and the quarrels and enmities engendered thereby between Morse and some of the contractors and others who had engaged in the enterprise; suffice it to say that Alfred Vail stood by Morse valiantly and worked untiringly to establish telegraphic communication between Washington and Baltimore. During the construction of this line Vail again improved the receiving machine, or register, to such an extent that it served almost unchanged, in the form he used at Baltimore, as long as telegraph operators received messages by register instead of by sound. In 1868 there were still several in use at small stations on the Lake Shore and Michigan Southern Railroad.

It was not surely known until 1871 that Vail was the sole inventor of this register and that Morse never saw it until it was completed. A certificate written by Vail himself, reciting this fact, was found attached to one of the Baltimore registers, after it had rested for years in the National Museum. We have this information on the authority of Franklin Leonard Pope, who published a facsimile of the certificate in the Century Magazine for April, 1888.

Alfred Vail, according to his letters and the testimony of Wm. Baxter, was as singularly modest and unassuming as Professor Morse was the reverse. It is unlikely that Vail ever knew that he could have patented every improvement he made in telegraph apparatus as well as his invention of the Morse alphabet. He probably died in the erroneous belief that his contract with Morse prevented him from profiting by his own inventions, except as a partner in the business and Professor Morse never publicly acknowledged his weighty indebtedness to Vail any more than he recognized the importance to him of the prior discoveries of Professor Joseph Henry.

At one time during the experiments at Washington early in 1838, Vail, growing tired of being referred to as "my assistant," called Professor Morse's attention sharply to his standing as a partner and the source of all the finances, and, according to Vail's letter to his brother, George, Morse apologized. But he never seemed to reform. He always referred to Vail as his assistant, whereas, Vail's name should always have been associated with that of Morse in all of the honors due to the inventors of the telegraph, and Professor Joseph Henry should have had full credit in history for the important part his discoveries made in the success of the electromagnetic telegraph. Had he taken out a patent in 1831, covering his discoveries, Morse would have been powerless without his help, or his consent to use the electromagnet for signaling purposes.

Professor Henry was a scientist and a teacher. Professor Morse was neither.

When the success of the electric telegraph became assured, the patent was assailed by many claimants and persons desiring to build lines and engage in the business which promised rich returns, but Alfred Vail stood staunchly by Professor Morse and helped to have him awarded the decision by the Supreme Court of the United States, which settled his claim to the invention. Vail profited in this decision to the extent only of his business partnership. Morse took and retained all of the credit and the lion's share of the reward in money. Posterity should not envy Morse his honors and rewards, but the truth should be known and others, especially Henry and Vail, should accorded in future histories, and in the memories of this and succeeding generations of telegraph and telepnone men, their just meed of praise.

In delivering the opinion of the court in the case of

O'Reilley, vs. Morse, et. al., Chief Justice Roger B. Taney, of the Supreme Court of the United States, speaking of Professor Henry's testimony in Morse's favor, voiced the following remarkable tribute:

"And it is due him (Professor Joseph Henry) to say that no one has contributed more to enlarge the knowledge of electromagnetism, and lay the foundations of the great invention of which we are speaking, than the Professor himself." (Vol. 56, U. S. Ct. Reports, A. D. 1853.)

To appreciate the deep significance of these words, it must be remembered that Professor Joseph Henry had no interest whatever in the case before the court.

A dramatic story of the exhibits made of the working of the telegraph at Washington, after the appropriation had been made and construction started on an experimental line to Baltimore, is told in Scribner's Magazine for May, 1892, by John W. Kirk, and is referred to herein as throwing some interesting side lights on the character of Morse and the ingenuity and resourcefulness of Alfred Vail. The title of the story is "The First News Message by Telegraph," and is run under the primary caption, "Historic Moments." Mr. Kirk describes himself as one "looking after some bids for carrying mails in Ohio." His business in Washington seemed to be largely with the second assistant postmaster-general, also an Ohio man, to whom had been assigned the expenditure of the $30,000 appropriated to Morse's experiments, but who had no confidence in the enterprise and feared his connection with it would forever ruin his political career. He begged Kirk to act as his substitute and gave him letters and other credentials. Mr. Kirk naively states that "under the circumstances" he could not well refuse to assist his friend, the second assistant postmaster-general. Obviously.

Professor Morse had taken possession of a little room in the Capitol and day after day as Kirk watched the care-worn, spare and anxious man working amidst his curious apparatus, he learned to have sympathy with the professor's sincerity and perseverance. He summoned a congressional committee at Morse's request and a trial was made of a line five miles in length and was successful. But the congressmen, as a rule, looked upon Morse as a crank and as they couldn't seem to understand anything explained to them and were unable to decipher the telegraphic code, Kirk heard such remarks as, "That's what I call pretty thin," and "It won't do. That doesn't prove anything." If Morse heard these criticisms, he paid no attention to them and continued his work.

Meantime, the date set for the meeting of the Whig national convention at Baltimore approached and Alfred Vail was nearing Annapolis Junction with the trial line. Kirk suggested to Morse the value of setting up instruments at Annapolis Junction, getting the results of the nominations from returning delegates and telegraphing them to Washington. Vail was equal to the occasion and had ready a platform in the open air from which he announced to Morse at Washington the nominations of Clay and Frelinghuysen. This was the second message sent of historical interest using "Morse" alphabet. The first being on January 6, 1838, to convince Judge Stephen Vail as heretofore related. This message was read as soon as received, May 1, 1844, to a crowd awaiting the train from Baltimore. They were skeptical and said, "You are quizzing us. It is easy to guess Clay heads the ticket, but Frelinghuysen—who the devil is Frelinghuysen?"

The line was completed to Baltimore May 24, 1844, and the first message sent from Washington to Baltimore was that written by Annie G. Ellsworth, "What hath God wrought?" The message has come down to us in history as the first one ever sent.

Benson John Lossing, the historian, makes this mistaken statement, in an article in the May, 1873, issue of Scribner's Magazine, one year after the death of Professor Morse.

Many telegraph operators throughout the country who, in 1869 and 1870, contributed one dollar each to a bronze statue of Morse to be erected in Central Park, New York, in 1871, thought Miss Ellsworth was the operator who transmitted the historical message, Washington to Baltimore, but Professor Morse and Alfred Vail were, at that time, May 24, 1844, the only telegraph operators in the world. Alfred Vail sent the first two messages and received and repeated the third one that has been recorded in history. In addition to inventing the registers that recorded each of these messages, he invented the telegraph keys by which the third was transmitted.

The year of the death of Alfred Vail is not clearly stated in any of the writings consulted for this narrative. Franklin L. Pope incidentally mentions its occurrence ten years prior to the date of a dinner given Professor Morse in New York, but he does not give the date of the dinner. There was one given in 1868, possibly another at the dedication of the Morse statue in 1871, but as the attendance of Chief Justice Chase is stated and as the latter was stricken by paralysis in 1870, it is likely that of 1868 is referred to, and this would fix the year of Alfred Vail's death as 1858, at the age of 51, which is probably correct. Professor Morse died in April, 1872.

(To be concluded.)

French Village Council Bars Telephone.

There is a little town in France which apparently gets along very well without the telephone and is not at all predisposed in favor of the innovation. This is the little village of St. Martin d'Orden, in the Youne Department, which has a postoffice and a telegraph and has refused to have a telephone put in, says a special Paris cable to the Chicago Examiner.

"If the telephone is put in," says the village council, "we shall refuse to use it. When we are in a hurry we can use the telegraph."

Newcastle, Ind., Regrets Loss of Competition.

The Public Service Commission of Indiana has received a complaint from members of the city council at Newcastle, Ind., respecting the telephone service of the Bell company there. The complaint recites that the Bell company gave excellent service and charged reasonable rates as long as it had competition, but now that it is the sole occupant of the field the service, it is alleged, is unsatisfactory and the rates too high.

Chicago Receives Telephone Company's Check for $199,581.

John E. Trager, city comptroller of Chicago, recently received a check for $199,581 from the Chicago Telephone Co. as the city's share of the gross receipts of the company for the six months ending June 30. The check was in settlement of the contract with the city for the 3 per cent. tax on the gross receipts, payable in semi-annual installments. The payment made exceeds that made February 1 by $13,000 and that of September 1, 1912, by $22,000.

Telephone Company at Paris, Ky., Reorganized.

The Bourbon Home Telephone Co., of Paris, Ky., has been sold at receiver's sale to a syndicate headed by Samuel W. Heller, of Louisville, the court receiver in charge of the property. The company has been reorganized and incorporated as the Paris Home Telephone & Telegraph Co., with a capital stock of $30,000. The stock is held mainly by Samuel W. Heller.

Practical Subjects—Letters and Discussions

Letters From a Retired Lineman to His Nephew.

Podunk Valley Farm.

Dear Ben:

There is a general discussion going on in this place again. You remember I told you the live ones had a considerable number of opinions about the kind of a club best suited for killing rats. Since then guns, ammunition, bait, and poison have in turn been subjects of general debate and experiment.

Now they have come back to Doe's opinion that cats are the only remedy. When Podunk folks go into a thing, they certainly go the limit. First they came to me for kittens, which I was glad to get rid of, but I didn't have enough to go around. Then they began sending away for them. The price paid at the start was a dollar but has gradually increased until $25 has been paid for a prize Angora.

I didn't know there was as many breeds of cats, but I guess Podunk has all the different kinds including the tailless kind from the Isle of Man. Doc Stuver helps matters along by mentioning a new species every few days. He says that there are a few kinds which he hasn't mentioned.

Which reminds me that there are still a few things about pole lines I haven't touched upon in writing you. I guess there are several kinds of construction you have

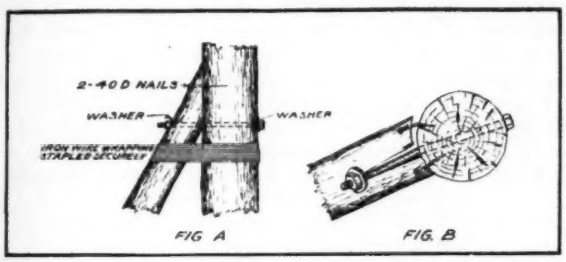


Fig. 1. Method of Attaching Brace—Result of Pole Turning.

not come up against yet. You say you have never had occasion to use a pole brace until last week. We used a good many in my day. At that time we were so reckless with poles that we used them for everything we could. Then again we didn't have to dig but four feet for a push brace but of course a push and pull brace had to go as deep as an anchor.

I can think of two very good reasons why their general use was abandoned, as well as several less important ones.

The first, of course, is the initial cost of the poles used for a brace. Now they are building so close to the ground that a pole long enough for a brace can be used in the line somewhere. Then the cost of setting a push brace is equal to placing guy strand to an anchor, while for a push and pull brace, it is considerably more.

The other main reason is the undeniable fact that the brace weakens as fast as the pole to which it is attached. That is, it will rot off at the ground line in about the same length of time. It's a case of the "Deacon's One Hoss Shay" over again.

There is a question also whether a brace is ever as strong as a guy and anchor. My belief is that it holds a pole too rigid. It is seldom that a pole remains exactly as it is set for many months. We used to attach the brace to the pole this way (Fig. 1-A) Frequently as the slack evens itself, the pole will turn, which brings about a condition like this (Fig. 1-B). Even if the brace does not split, the strain is there just the same.

Quite often poles are drawn ahead, or back, in the line a few inches. A guy anchor will keep in line with the strain, but a brace does not move as easily and the strain centers at the through bolt. Again, having a 5/8-inch hole through a pole at a point where the strain will be, weakens the pole more than one would imagine.

Not long ago I replaced a pole in the line near here that

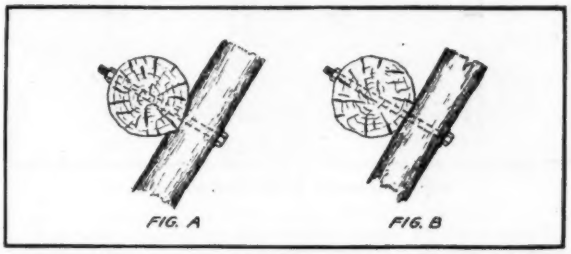


Fig. 2. Methods of Fastening Slug to Push and Pull Braces.

was broken about five feet from the ground line. Upon examination I found that the pole had been used for a target. Nine bullets had been shot into it, passing about two-thirds of the way through. It happened to be a brittle piece of timber, and the bullet holes so weakened it, that it snapped under the first heavy storm.

On a very heavy strain, the slug on a push and pull brace should be morticed, or gained, into the brace (Fig. 2-A), in addition to a through bolt. On lighter strains a through bolt is sufficient.

The length of a slug should never be less than five feet for a 12-inch diameter.

There are places, of course, where conditions are such that space for a proper lead on anchor guys cannot be secured. In such cases braces must be used. Sometimes an "A", or "H", fixture (Fig. 3) may be more satisfactory.

An "A" fixture requires no side guys, if the apex is properly fitted and bolted with two through bolts. Each cross arm should have two bolts—one through each pole.

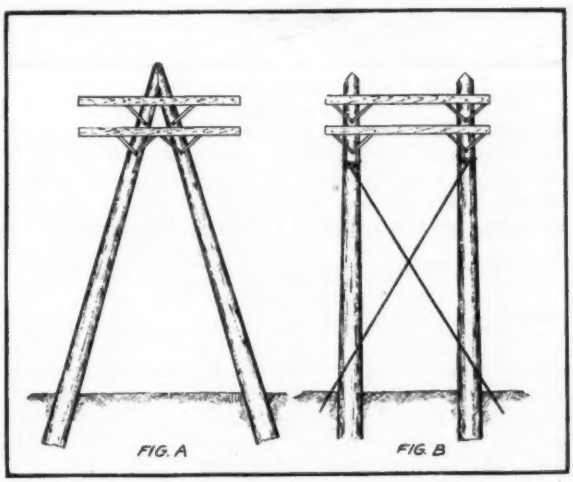


Fig. 3. "A" and "H" Fixtures.

An "H" fixture can be side guyed requiring very little more space than the width of the fixture (Fig. 3-B). An "X" guy between the two poles is considered satisfactory by some builders. However, I like the anchors best as any pole guy weakens as fast as the pole to which it is attached weakens.

There is still another sort of fixture for use in swampy places where neither pole nor anchors can be tamped solid. This is what we used to call a "floater" or "pontoon" fixture. We built them in several styles, according to the material we had on hand. Here are some of them (Fig. 4).

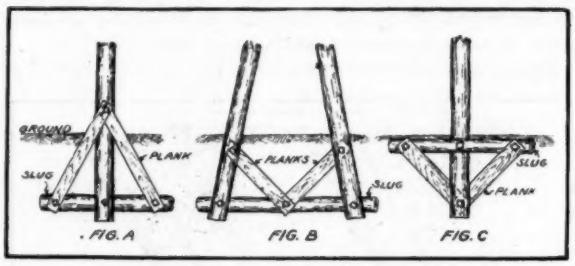


Fig. 4. Floater or Pontoon Fixtures.

These fixtures will balance themselves pretty well in muck or swampy ground. Style C is especially built for setting in floating bogs. Of course such ground should be avoided, but sometimes it is impossible to get away from it without making a wide and expensive detour. River approaches are places which cannot always be avoided, and it is sometimes more economical to build across narrow strips of lowland.

There is still another style (Fig. 5) of fixture used. It is made by sinking a caisson of curbing, either square or round, and filling in around the pole with gravel or rocks. Two ordinary tar barrels with both heads removed, placed one

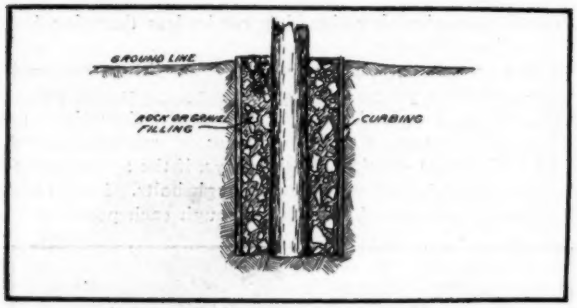


Fig. 5. The Caisson Type of Floater.

above the other, will serve for a caisson in some instances. This is a good plan where the land is often under water.

Buddy has a new baseball suit and a black eye. Like all boys, he thinks he's some ball player. However, he's willing to take his bumps and go back next day for more.

Uncle Dick.

My Duty as Chief Operator.

The duty of a chief operator in a town the size of Temple is a combination of duties, and to keep them all up well, we must learn just which one to handle first. I consider it my first duty as a chief operator to know how to operate well myself. My second duty, and a very important one, is to see that each operator is qualified to take care of the work assigned to her.

To the heaviest positions are assigned the more experienced operators, while on lighter ones the newer and weaker operators are used. I never give toll work to an operator against her will, for out of ten first class operators one will not find two who will make good on toll work. I think toll work requires more good points than local work, and all will admit it is much more trying on the nerves.

I always try to make of myself an example for the operators, doing nothing myself that I would not allow them to do. And when extreme correction is to be made, to always talk to an operator privately, thus gaining more and saving her all the humiliation possible.

Don't make yourself too much one of them; be kind, but at the same time, be plain and positive with them; they will appreciate you all the more. Don't tell them all the bad and unpleasant things and leave the good ones unmentioned. We all appreciate a kind word.

On entering the operating room in the morning, I note the attitude of the operators, and, if there are any changes to be made, attend to them at once. Next I see that the operation room is made just as comfortable as possible under prevailing conditions. A test of all toll and country lines is then made and tickets made out accordingly. All local trouble of the previous evening is at once reported to the wire chief. I then see that a report is made of all bad cords and jacks.

I next give my attention to the toll work of the previous day, balancing any office cash with tickets for the tolls, make corrections in rates, the regular daily reports and posting is then done, together with any further trouble that may come in.

Much of the afternoon is taken up with work in the manager's office. It is there I make out the regular monthly rental bills, assist in the collecting of bad accounts and disputed toll calls. This work is accomplished by use of the telephone and a messenger boy. I assist in writing up daily collection statements, making up statements of uncollected and uncollectable rents and tolls. If the manager is out of the city, I give my entire time to his office, placing a competent operator in charge of the operating room.

I assign all numbers for new installation and use dummy plugs of different colors as follows: Red for take-outs; green for temporary disconnection; and white for change in number. These changes are made immediately after the ticket has been O. K'd. by the wire chief. When I have finished with it, it is passed on to the manager's office, O. K'd. again and filed.

Before leaving the office in the afternoon, I see that everything is in good shape and that all existing trouble has been passed on by the wire chief. I then leave the duties of the room with the evening operator.

Temple, Texas. Mrs. W. S. Martin.

The Telephone Secures Access.

"Just why should a call on the telephone be deemed important enough to break up the average personal conversation?" asks the Denver Republican.

"Most men will cut a talk in two on getting a telephone summons and will turn at once to the instrument, instead of telling a clerk to have the telephone caller wait or to call up later. Is there something hypnotic in the ring of the telephone, or is it the glad uncertainty that the one who uses the wire will be brief, while the personal caller may talk on forever?"

The answer to the above is simple, commented The Telephone Review. Business men realize that the telephone is their most valuable employe and have learned by experience that they cannot afford to neglect its summons. Psychology and not hypnotism is involved in the telephone call, and the business man prefers to answer it at once rather than run the risk of losing a customer. They also do this, just as other people do, because they themselves use the telephone only when it is necessary, and they give the "calling party" credit for the same degree of intelligence. Regarding brevity, we know from past experience that when an important matter is concerned, live business men use the telephone for long as well as short conversations, and will listen just as long over the telephone as if face to face.

Sparks from the Troubleman's Department

The Telephone Company Took Notice.

Telephone companies receive all kinds of strange letters and one of this class was recently delivered to the Portsmouth Telephone Co., Portsmouth, Ohio. It is reproduced below, as nearly as possible in its original form:

THE HOME TELEPHONE COMPANY
WHERE AS JAMES ROBERTS HATH MADE COMPLAINT that one of your lines running from main line to cap john f davsi home is resting on my roof and has wore a hole in the roof and the live wire is exposed her there fore i warn you that to move this line at once and if anny damages ocur i will hold you responsible for all damages whi ch may result please come and remove the same at onc with out further trouble

Failed to Wake Him.

A subscriber recently called the Uxbridge operator and requested that she ring two long, loud rings on his line, says The New England Telephone Topics. The operator rang as requested and challenged on the line, expecting a probable report of "bell don't ring," etc., but nothing was heard. Believing that there was trouble on the line, the chief operator called the subscriber back, and when questioned as to any difficulty he replied, "Oh, no! But you see there is a fellow asleep upstairs and I wanted to see if you could wake him up."

The Telephone.

Heir of the centuries am I,
  But newly come to serve mankind and you;
Messenger of the lame, or for the spry,
  Alike I serve where'er my helpfulness is due.
I ease the toil of every race of men;
  I warnings give of fire, of blood, of death;
Swiftly, silently I summon succor when
  All else were vain and wastefulness of breath.

For nineteen fateful centuries, about,
  Had time toiled on, now slow, anon with speed,
Before the world and you had found me out,
  And set me at the work in which I lead.
But now, your faithful servant, here am I—
  Quick as light, my movements never cease.
I flash the news that stifles many a sigh
  And lend my potent strength to world wide peace.

S. W. Telephone News.

Did They Know What Was Wanted?

A company in Texas decided to close a small exchange which was not paying expenses, says Cross Talk. The following letter to the telephone company from the man who had charge of the small office, is self explanatory:

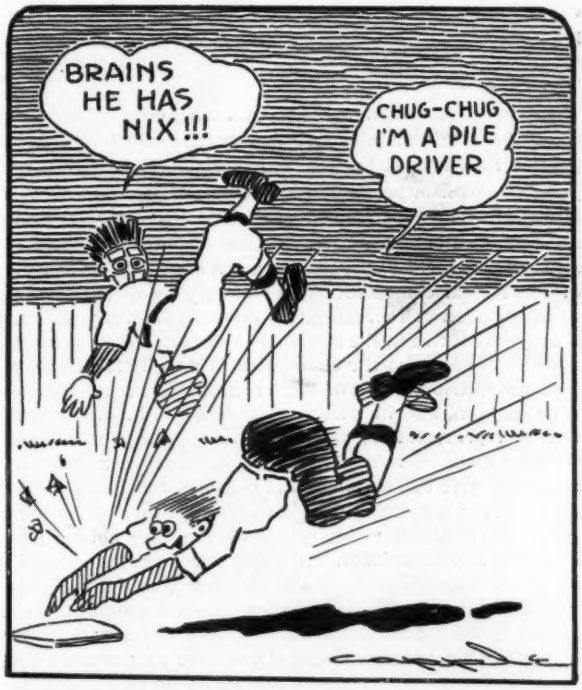
"Dear Frend I will write you a few lins to let you hear from me. Say are you going to Bild this up a gin if not let me on at once Mr.——— can over hear and got the Bord and Kild the hold thing dead as hell. Please let me no at once what you are going to do. Answer at once to———

"P. S.: If you dont ame to do iny thing Pay me up and I will sind you these baxes at once the sum of 21.45 for warlk with wagon tame and Biggy and harse."

TELEPHONY'S BASEBALL TERMS.

HAR-HAR CALLS HIS SELF A PITCHER
TAKE HIS MEASURE KID YOUVE GOT THE TAPE
AS I WAS SAYING-
HO-HO HAR-HAR LOOKEE THE STIFF
OH YOU CHARLEY HORSE

A Noisy Line.



A Local Battery.

A Sublunary Comment.

The telephone lines of the United States are long enough to make fifty lines to the moon, asserts a serious-minded contemporary. They carry a lot of moon talk, as it is, says the Muscatine, (Iowa) Journal.

How Public Service Commissioners Should Be Chosen

The Author Holds That Too Little Study and Consideration Have Been Given to the Personnel of Public Utility Commissions — Efficiency of Commissions Depends on Personal Element — Republished from Journal of Electricity, Power & Gas

By George L. Myers

Much study and consideration has been given to the provisions of public utility laws in order to insure effective regulation and too little study and consideration to the personnel of public utility commissions. The kind of regulation that is to be had is entirely dependent upon the efficiency of the commissioners who do the regulating. If there is not an efficient and competent commission there cannot be efficient and proper regulation. The personal equation is all important and of the utmost concern to both the public and the public utility corporations.

A public utility commission is essentially an administrative and quasi-judicial body in which is vested vast powers of regulation and control, even to the extent of exercising close supervision and direction of the affairs of public service corporations. Control without responsibility is inconsistent. Therefore it is necessary that men possessed of a sense of responsibility comprise the commission, men who can be fair and just to the corporations as well as to the public and impartial and unbiased in their attitude and capable of judging of the merits and facts involved in cases with which they have to deal.

As conditions exist, politics have too much influence in the make-up of commissions. A commissioner is often appointed as a reward for political services rendered the appointive power or because of his political affiliations. Again, in some cases geographical considerations enter into the selection of a commissioner. Sometimes he is appointed to strengthen the chief executive in a given locality, or because of other local considerations, or elected by districts so as to insure district representation on the commission. This is often conducive to the selection of commissioners who are apt to be unfit or to the elimination of men better qualified. The commission is not of local concern, but it is of statewide concern, and its personnel should not be based upon district representation, and any man appointed or elected should be considered sufficiently broad-gauged and liberal minded to give due and impartial consideration to the entire state in the performance of his duties. Neither politics nor geographical consideration should govern, only ability qualifications and experience. If political considerations make possible his appointment or election such considerations are very likely to govern his conduct as a commissioner. Thus in playing politics he is liable to be unjust to either the public or the public service corporations. No good reasons can be given for politics having anything to do with his selection. Certainly it will not make him more efficient and faithful, and no political principles or issues are to be advanced or sustained. His function is merely to administer the law as enacted regarding public service companies, and it makes no difference what the provisions of the law are, they must be carried out and enforced regardless of the commissioner's political affiliations, and he should not be influenced because of political ambitions or petty partisanship in issuing an order, establishing a rule or rendering a decision. The commission should not be a political clearing house. If it is, the public service corporations are going to be the goat and they cannot labor under disadvantages or be subject to unjust burdens without the public suffering with them in consequence, and the only one who will not suffer will be the commissioner who profits because of having used his office for political purposes. Politics do not aid, but actually prevent impartial action, and it is positively necessary that the commission be nonpartisan if the best kind of service is to be rendered.

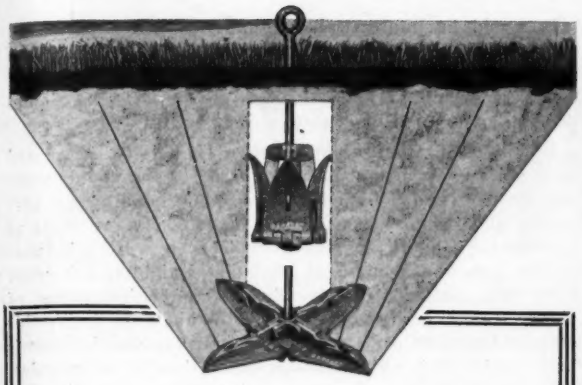
Furthermore, under our present method of choosing commissioners there is a lack of permanency because of politics. If one party is shorn of power and superseded by another, it generally results in a change of a commissioner or two, and in some cases, a change in the entire personnel of the commission, and especially if it is appointive. Thus a man scarcely becomes familiar with the duties of his office, conversant with the public utility laws and educated in the regulation of public utility corporations before he is deprived of office, not necessarily because he is incompetent and inefficient, but due to his not being affiliated with the party in power. Why should the commission be used to educate a man to intelligently perform the duties of his office and enlighten him as to the fundamentals governing public utility regulation and then summarily dismiss him because of his political convictions? Such a condition is ridiculous and absurd. It results detrimentally to the public and the public utility corporations and it is impossible to get down to a satisfactory basis of regulation before another change ensues. If a person were placed at the head of a large public utility or industrial corporation and discharged when he had become familiar with the duties of his office and efficient in performing them and such policy were continued, it would not be long before the organization would become helplessly disorganized and in exceedingly straitened circumstances. The time has come when the people are demanding more in the way of service and that is why they should select the commissioners and do so in such a manner as to leave out of consideration entirely any question of politics as they are now doing in numerous municipalities under commission government, which has proved so eminently satisfactory that resort has never been had in a single instance to the old political and ward system.

The Interstate Commerce Commission is a success and has the confidence of the public because it is non-partisan in character, composed of men of ability, capacity, knowledge and experience, and is subject to few changes in its personnel. There have been few changes since its inception and since its membership was enlarged. No public body has more difficult duties to perform and none performs them with a greater sense of responsibility to the public and with more regard for the interests of the common carriers. The national commission itself is a powerful argument for non-partisan state commissions.

We are never going to get the right kind of results through regulation unless we give regulation an opportunity to demonstrate and prove its effectiveness and get it down to a fair, business-like and scientific basis so that all parties concerned can get intelligent, just and impartial consideration by a commission of experience and learning having due regard for the rights of the public and a comprehension of the conditions under which a public utility corporation operates.

Mention has been made of a conditon. If there is opportunity for improvement or an undesirable condition to be rectified, the question naturally arises as to the remedy.

1. The commission should be elected at large by all the



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Besides this increased holding power the OSHKOSH can be set by one man requiring no extra tools.

Expands automatically with the strain on the guy strand. For that reason it can't be carelessly set.

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But you want holding power—don't you?

Then you want the Oshkosh by all means. The Oshkosh is not only cheap, easily set and the best all around, but above all it has the holding power, that you want and that you need to protect your pole line through the sleet storms of winter.

Oshkosh Manufacturing Company

Box 682

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qualified voters of the state. This will eliminate appointment by the governor or election by districts.

2. The election should be strictly non-partisan and no party or other political designation should appear on the ballot after a candidate's name. In a good many of the states judicial officers are selected in a non-partisan manner and it would seem better if the name of the candidate for commissioner could appear on a separate ballot along with those of candidates for judicial offices.

3. The election of no more than one or two commissioners biennially.

4. The preferential system of voting should be adopted. This for the reason that it makes possible the selection of a candidate by a majority vote and tends to eliminate the possibility of the election of a candidate who may be unfit, but who has a large personal following. It has a tendency to make the electorate more non-partisan and discriminating in its selection and more probable the selection of a candidate better qualified and more capable. In instances where the preferential system does not meet with approval the non-partisan elimination primary system should be adopted.

5. The recall should be effective in all cases, more especially where the term is for a period of four or six years. This will be the answer to the opponents of the long term because it will make possible the retirement of an obnoxious commissioner at any time.

6. The term of a commisioner should be six years. This makes it possible for him to become reasonably familiar with the public utility laws and the problems affecting regulation. In most of the states the commission consists of three members. This would make necessary the election of only one commissioner at an election. In no state is the membership more than twice the number of years of such a term, thus making it necessary to elect at one time no more than two commissioners.

7. The payment of an adequate salary so that the best services can be obtained and experienced, learned and capable men induced to become candidates. Too often the services demanded and required of a particular officer are totally out of proportion to the salary paid by the state and prevent the acceptance of office by men who are practical and experienced and who have been successful and have a proper conception of business methods and administration.

It would be impractical and undesirable to apply civil service rules and regulations because of the nature of the duties performed by a commissioner, but the method of selection should be such that his tenure of office would depend upon merit and service rendered.

In any event the chief executive should not be vested with the power of appointment. If he is, the appointment will be determined by politics and the commission's personnel at all times uncertain and changing. If it is not as a reward for political services rendered it will be because of the appointee's political affiliations, and regardless of how well qualified the incumbent may be by reason of ability and experience he will be unlikely to retain his office. Again, as previously mentioned, the appointment is liable to be made as a means of strengthening the appointive power or more firmly assuring his tenure of office. The method of appointment would be preferable if it were not that there is so much politics connected with it.

The unfortunate feature of regulation as it exists at the present time is the probability under our present methods of commissioners being chosen who are totally unfit and absolutely unqualified to serve and who are unfamiliar with the intricacies and problems involved.

The pointing out of a condition and the suggestion of a possible remedy should not be construed as a reflection on any commission. No doubt a majority of the commissions consist of men of ability, learning and experience and men who are fair and reasonable, or at least endeavor to be so. However, there should be an effort at all times to eliminate from the blighting influence of partisan politics all public offices that have to do principally with the administration or interpretation of the laws. Of course, there are exceptions, but there are none as to the judiciary. The exceptions exist where the functions of the office have a close relationship with the recommendation or disapproval of legislation, or where there is involved in the selection of a public officer the advocacy and enunciation of certain principles and the adoption of definite policies affecting state government, as for instance, the governorship of a state. It is even beginning to be questioned and doubted by many citizens that it is necessary to concern ourselves at all with partisan politics in the government of a state, as is evinced by the agitation for the application to state government of the commission form.

Delays Are Often Costly

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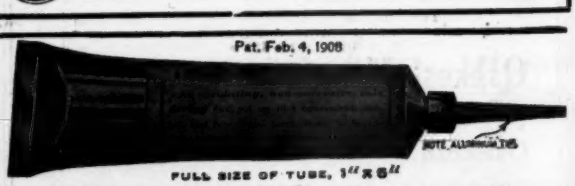

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